

**TRUST, PRIVACY, AND DISCLOSURE
- A SITUATIONAL PERSPECTIVE**

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- A SITUATIONAL PERSPECTIVE**

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Summary

To be successful in e-commerce, consumers' personal information is extremely important to online vendors in understanding their consumers and planning their marketing strategies. From an extensive literature review, it has been discovered that issues such as consumer trust, rewards, and privacy concerns play important roles in determining consumers' willingness to disclose their personal information online. However, the previous studies have not been able to fully explain the working mechanisms of trust in determining the consumers' disclosure intention. Hence, this study attempts to offer a better explanation for the phenomenon of consumers' online disclosure, by constructing a research model using both dispositional and situational factors. In particular, building on theories such as Social Exchange Theory, it has been posited that the consumers would be more willing to disclose to the online vendors if they perceive high values of the offered rewards, or have low levels of specific privacy concerns in the vendors' information privacy practices. Besides having a direct main effect in consumers' online disclosure tendency, trust has also been posited to strengthen the relationship between consumers' reward preferences and their perceived rewards values of the offered rewards; and weaken the relationship between consumers' dispositional privacy concerns and their specific privacy concerns.

A pilot study, which uses data from a previous study, has showed that consumer trust, reward preferences, and dispositional privacy concerns indeed have direct effect on the consumers' online disclosure intention. Furthermore, it has verified the moderation roles of trust on both consumers' reward preferences and dispositional privacy concerns. However, without situational factors, the whole phenomenon of consumers' online disclosure tendency could not be sufficiently explained. Hence, using survey methodology, a second study has been conducted. The results from the second study further confirmed that consumers would be willing to disclose their personal information to online vendors if their perceived values of the offered rewards are high, or when they have high trust in the vendors. Furthermore, it has

been discovered that consumers with high specific privacy concerns (in particular, improper collection and improper access) would be less willing to disclose. The results have also shown that trust is able to strengthen the relationship between consumers' reward preferences and their perceived reward values (except for altruism). However, there is only weak evidence for the moderation effect that trust has on the relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns (except for the issue regarding errors in storage). The findings, along with their implications to both the researchers and the practitioners are also discussed.

1 Introduction

1.1 Current Trends

Since the 1990s, there has been an ever-increasing growth in the usage of Internet by end users. In a recent research that was conducted by IDC research (2003), this phenomenon has been found to be indeed true, and it has been predicted that the worldwide end users' generated Internet traffic volume would continue to increase at a near doubly rate over the next five years. Furthermore, Nielsen-NetRatings (2002) has reported that by the end of 2002, more than 560 million people worldwide would have access to the Internet. This increasing growth in Internet usage fuels the growth and worth of e-commerce. With more end users logging onto the Internet, it would provide a sizable consumer base that would attract businesses in industries such as retail and service to setup online storefronts to sell their products/services to the end consumers. As reported in an article published on the InternetNews (2003), it has been expected that the spending amount from just e-commerce alone, would be as much as USD 14.8 billions, in the first quarter of 2003. Hence, it is undeniable that e-commerce is still a profitable marketplace.

Nevertheless, to be successful and profitable in e-commerce, businesses (i.e. online vendors) need to have a good understanding of their consumers and plan their marketing strategies to cater to the needs of each unique consumer. Numerous online vendors such as Dell, and Amazon, have shown through their accomplishments that mass customization is one of the most successful marketing strategies available that could attract new consumers and maintain a long-term profitable relationship with their existing consumers. The reasons for the success of mass customization includes not only its ability to significantly reduce the information load that is targeted to each individual consumer, but also its ability to create satisfied consumers by suggesting highly relevant and consumer preferred products or services (Ansari et al., 2000; Ansari and Mela, 2003).

However, in order to develop triumphant marketing strategies like that of mass customization, the most important resource would be the consumers' personal information, which could be collected through means such as online surveys (Ansari et al., 2000; Ansari and Mela, 2003). In fact, the research conducted by Ansari and Mela (2003) has found that with the exploiting of consumers' personal information, mass customization (e.g. onsite customization, external customization like email and advertisement, etc.), which tailors unique information, products, and marketing programs (such as reward programs) to the needs and preferences of each consumer, is able to attract new consumers, increase the loyalty of existing consumers, and potentially increase the response rates from customized emails to as much as 62%. In spite of the importance of personal information, prior research such as Hoffman et al. (1999) has found that soliciting personal information from online consumers is not a simple task. In fact, Hoffman et al. (1999) reported that almost 95% of the consumers would say no to online vendors' requests for the disclosure of their personal information. Till date, this phenomenon is still evident as a recent study from Jupiter Research (2002) has reported that only 60% of the consumers would provide insensitive information such as email addresses, while less than 19% of the consumers would provide sensitive information such as phone numbers and household incomes.

1.2 Privacy Concerns, Rewards, and Consumer Trust

Prior research has also suggested that information privacy, which is defined as "one's ability to personally control the information about one's self", could be one of the reasons why consumers are unwilling to disclose their personal information online. Indeed, privacy issues have been ranked as the number one consumer issue facing the e-commerce, and it has been predicted that online vendors would lose as much as USD 24.5 billions worth of online sales if they do not address consumers' privacy concerns in their information privacy practices (Jupiter Research, 2002). In addition, Jupiter Research (2002) has also reported that as much as 70% of the

consumers it surveyed have privacy concerns regarding the vendors in e-commerce. Moreover, in a more recent study conducted by Forrester (2004), it has been discovered that due to their privacy concerns, a significant amount of consumers would perform actions such as not disclosing their personal information to online vendors, and requesting the vendors to remove their personal information.

The importance of privacy is evident. Following the development of e-commerce in the early 1990s, researchers have taken a resurgence of interest in the issue of information privacy. Although it may be argued that the research stream in the issue of information privacy is still in its infancy, there are numerous research findings that are beneficial to both researchers and practitioners. One significant contribution is the discovery that privacy concern is a multi-dimensional construct, which includes four basic dimensions. The four respective dimensions of privacy concerns are improper collection, errors in storage, unauthorized secondary usage, and improper access to the personal information (Smith et al. 1996; Stewart and Segars, 2002). Other contributions include the studying of its antecedents (e.g. trust (Smith et al., 1996; Milne and Boza, 1998), motivation (Milne and Gordon, 1993; Sheehan and Hoy, 2000), etc.), consequences (e.g. disclosure of information (Stone et al., 1983; Smith et al., 1996), etc.), and exploring measures that could be used to alleviate privacy concerns (e.g. anonymity (Wang et al., 1998), fair information practices (Culnan, 1993), etc.).

Prior researches and theories such as Social Exchange Theory (SET) have also given insights that with the offering of preferred rewards, consumers would tend to have high perceived values of the given rewards, and hence have a higher tendency to disclose their personal information to the vendors (Thiaut and Kelly, 1959; Homans, 1950; 1961; Blau, 1964; Tam et al., 2002; Xu et al., 2003). In support of this, a recent study by Jupiter Research (2002) has discovered that as much as 82% of the consumers would be willing to disclose their personal information to the online

vendors if they are provided with small tokens of rewards. There are many different kinds of rewards. However, they could be generally classified as either extrinsic (e.g. monetary savings, time savings, self-concept enhancement, and social adjustment) or intrinsic rewards (e.g. pleasure, novelty, and altruism) (Tam et al., 2002). Theories such as Benefit Congruency Principle (Chandon et al., 2000), and General Principle of Compatibility (Tversky et al., 1988) have also contributed in this area of research, by showing telltale signs of the existence of reward preferences that would determine the consumers' value of the offered rewards.

Of the 95% consumers who have the tendency to reject disclosure of their personal information to the online vendors, the most frequent rejection reason given (for as much as 63% of them) is that they do not have sufficient trust in the vendors that are collecting the information from them (Hoffman et al., 1999). This phenomenon is also agreed upon by other prior scholarly researches, which found that consumers are being subjected to more vulnerabilities and risks in e-commerce (e.g. Bhattacharjee, 2002; Gefen, 2003). Thus consumer trust (i.e. the willingness of an individual to be vulnerable in taking a risky action and depend on an online vendor, based on the expectations that it would not perform an undesirable action (e.g. infringe the privacy of the individual), irrespective of the ability to monitor and control the actions of the vendor) (Mayer, et al., 1995; McAllister, 1995) could be a critical barrier that hinders the soliciting of personal information from consumers.

In fact, existing trust literature has shown that the concept of consumer trust is important in e-commerce context (in particular in soliciting personal information), as it is able to reduce the complexity of a situation (Luhmann, 1979), builds relationship (Bhattacharjee, 2002), and reduces perceived risk (Morgan, and Hunt, 1994). Furthermore, it has been shown that with the presence of consumer trust in the online vendors, it would induce consumers' willingness to disclose their personal information (e.g. Reichheld and Schefter, 2000; Xu et al., 2003; etc.). Besides having a

direct effect on disclosure tendency, the exploratory research carried out by Xu et al. (2003), has also discovered that under the presence of consumer trust, the relationship between the consumers' reward preferences/dispositional privacy concerns and their disclosure tendency would be moderated. Hence, with the importance of personal information to the online vendors, and the essential roles of rewards, privacy concerns, and consumer trust, it is apparent that more in-depth study is needed to explore the relationships among these concepts.

1.3 Dispositional and Situational Perspectives

Approaches to studying online consumer behaviors such as disclosure tendency include the dispositional approach and the situational approach. Dispositional perspective tends to suggest that “dispositions/traits factors, which are inherent in the consumers, would account for their respective behaviors, responses, or intentions; while the situationists tend to argue that the consumers' behaviors or intentions are induced by stimuli that are present in the environment” (Mischel, 1984; Aiken, 1993; Todd et al., 1996). However, it has been argued that the “dispositions factors/traits are more predictive of only multiple instances of behavior rather than behavior in just a single situation” (McGowan and Gromly, 1976; Aries et al., 1983). Moreover, it has been confirmed not all individuals' behavior are consistent across situations (Bem and Allen, 1974). Hence, by considering only the dispositional factors, it might not be adequate to explain the whole phenomenon of the online consumer social behavior such as the disclosure tendency, which is highly dependent on the specific situation in which it occurs. One reason being that the inconsistency in the consumers' behaviors across different situations would not be accounted for (Mischel, 1968) (for example, a consumer, who has high dispositional trust and a general tendency to trust everyone across all situations, might not trust a website that is known for frauds and withheld his/her disclosure of sensitive personal information in that particular situation). Above and beyond, theories trying to explain consumers' behavior with only dispositional factors would

run having the “risk of circular reasoning” (Aiken, 1993). Therefore, in order to sufficiently and better explain consumers’ online disclosure intention, situational factors, which place greater emphasis on both the “subjective and cognitive aspect” (Staw et al., 1986), should also be considered in addition to the dispositional factors.

1.4 Research Questions

In seeking answers to the online consumers’ disclosure tendency, most of the existing papers in the e-commerce literature have only done in-depth study using either the dispositional or the situational factors. Hence, by considering both dispositional and situational factors, this study attempts to address the following research questions: (1) How does the situational presence of rewards, privacy concerns, and consumer trust affect consumers’ tendency to disclose their personal information to online vendors? (2) How do consumers’ dispositional traits such as reward preferences and dispositional privacy concerns impact upon their respective situational counterparts such as that of perceived reward values and specific privacy concerns? (3) How does consumer trust moderate the relationships between these dispositional traits and their situational counterparts?

By adopting both dispositional and situational factors, the findings of this exploratory study seek to contribute to the building of a theory that could better explain the phenomenon of consumers’ online disclosure tendency. In addition, the study also seeks to explore in depth the roles of and relationships between important concepts such as consumer trust, rewards, and privacy concerns in consumers’ online disclosure tendency. From a practitioner’s perspective, the study also seeks to provide practical and valuable suggestions to increase online vendors’ effectiveness soliciting personal information from their consumers.

The paper is organized as followed. A brief review of the existing literature in related topics was conducted and is presented in Section 2. Following that, Section 3 outlines the assumptions undertaken in this study and presents the study's conceptual framework. In the last part of Section 3, findings from a pilot study, using data set from a previous study, are also discussed and presented. Section 4 provides details about the methodology used to validate the model framework, with Section 5 exhibiting the properties of the measurement model and the results of the findings. Consequently, Section 6 discusses the findings and possible implications for both researchers and practitioners. Last but not least, Section 7 concludes the paper.

2 Literature Review

Focusing on the issue of soliciting personal information from online consumers, a thorough literature review was conducted on related theories and relevant concepts, such as privacy concerns, consumer trust, and motivations. This section summarizes and presents a brief review of the spectrum of appropriate literature.

2.1 Privacy Concerns

The notion of privacy is not new and it has existed for more than 100 years, where Warren and Brandeis (1890) first articulated it to refer to as “the right to be left alone”. However, it was not until the early 1990s that there has been a resurgence of interest in the notion of privacy, due mainly to popularity of Internet in 1990s. Till present there is no agreed upon definition of privacy, and various definitions have been suggested for the notion. Bates (1964) defines privacy as a “person’s feeling that others should be excluded from something which is of concern to him/her, and also the recognition that others have a right to do this”. Other researchers such as Schoeman (1984) define privacy as “the individual’s right to determine what information is communicated to others or the control an individual has over information about himself/herself”. On the other hand, researchers such as Goodwin (1991) delineates consumer privacy as “the consumer’s ability to control the presence of other people in the environment during a market transaction or consumption behavior and dissemination of information related to or provided during such transactions or behaviors to those who were not present”.

Privacy takes into consideration both information and physical access to a person. However, with the growth of Internet and in particular e-commerce, the immediate and main concern in most researches is information privacy. Hoffman (1980) first defined information privacy in terms of

three distinct rights, which include “the right of individuals to determine what information about themselves to share with others, the right of individuals to know what is being collected about them, and the right of individuals to access data in order to maintain society and regulate government”. Westin (1967), Stone et al. (1983) and Smith et al. (1996) delineate information privacy as “the ability of the individual to personally control information about one’s self”. Prior researches have shown that individual with higher levels of privacy concern are more likely to deny participation in activities/events that require the disclosure of personal information (Stone et al., 1983; Smith et al., 1996). In addition, researches such as that by Godwin (2001) have demonstrated that besides security concern, the consumer privacy concern is one of the major barriers for the success of e-commerce that encompasses of disclosing personal information and purchasing items online. Thus, with substantiation from these studies, consumers are observed to be highly concerned about their personal information and that the issue of privacy concern is important.

Prior researches such as Westin (FTC, 1996), Schoeman (1984, 1992), Kimmel (1996), Regan (1995), and Sheehan (2002) have argued that an individual’s information privacy concerns is contextual and dynamic in nature, and can be changed by both environmental and personal factors. Furthermore, Sheehan (2002) proposed a typology of Internet users, which classify Internet users to be unconcerned Internet users, circumspect Internet users, wary Internet users or alarmed Internet users. This typology of Internet users is an improvement of that by Westin (FTC, 1996), who proposed that consumers could be classified into unconcern consumers, concern consumers, and consumers who are pragmatic in their privacy concern. From the results of the survey conducted by Westin, he had also found that high percentage of respondents fall into the pragmatic consumer category. This further suggests that the contextual nature of the Internet heightens the contextual nature of privacy online.

A few taxonomy of privacy concern have also been developed. For example, Stone and Stone (1990), suggested that privacy consists of information control, regulation of interactions with others, and freedom of influence from others. After performing a concise literature review, Smith et al. (1996) identified four dimensions of consumer's privacy concerns and developed a validated instrument for measuring the identified privacy concern. The central dimensions of privacy concern consist of collection, internal and external unauthorized secondary usage, errors and improper access to personal information. In addition to the central dimensions, Smith et al. (1996) also identified two tangential dimensions. The two tangential dimensions are reduced judgment and combining data. Last but not least, Wang et al. (1998) suggested that the taxonomy of privacy concerns includes improper acquisition, improper use, improper storage, and privacy invasion (i.e. unwanted solicitation). The dimension of improper acquisition can be further broken down to improper access, improper collection, and improper monitoring, while the improper use dimension can be broken down into improper analysis and improper transfer.

In additional, prior researches have been conducted to establish on the antecedents of privacy. In a research by Sheehan (2002), it was found that with the presence of five factors, a consumer's privacy concerns would be reduced. They include awareness of data collection, information usage, information sensitivity, familiarity with entity and compensation. Besides Sheehan (2002), other researchers such as Cespedes and Smith (1993) and Nowak and Phelps (1995), had also found that with the awareness of information collection, consumers typically would be less concerned with privacy. On the other hand, researches by Foxman and Kilcoyne (1995), and Nowak and Phelps (1995) discovered that different usage for the information collected (i.e. whether the information is for the purpose of the single transaction or used for other unauthorized secondary usages beyond that transaction) would to lead to different levels of consumers' privacy concerns. Previous studies such as Gandy (1993) and Milne (1997) have also found that the collection of different information items that differ in the amount of sensitivity (e.g. name and credit card number) will

induce different level of privacy concerns in the consumer. However, even though there were attempts to distinguish the different levels of sensitivity in various types of data, no consensus has been accomplished yet (Hill, 1995). According to Jones (1991), information sensitivity seems to be contextual in nature, since the level of sensitivity is affected by a person's perception as well as the situation. Studies by Wang and Petrisson (1993), Rogers (1996), and Sheehan and Hoy (2000) has further conjectured that once consumers form an established knowledge of an online firm, either through previous experiences or past transactions, consumers would have less concern in information privacy issues.

Motivation (inclusive of both extrinsic and intrinsic) has also been determined to be an antecedent of privacy concern. In particular, Milne and Gordon (1993) suggested that consumers would be willing to "trade-off some degree of privacy" if they were rewarded with products and services that they preferred and desired. Also, many survey methodology literatures such as Chebat and Cohen (1984) have also suggested that motivating individuals with rewards, such as monetary compensation could increase the rate of response, which would in return provide relevant information as required by the survey. The research by Sheehan and Hoy (2000) has also provided partial support for the finding that increasing the value of extrinsic compensation given to the consumers during the exchange may reduce their concerns for online privacy issues.

One of the antecedents of privacy concerns that are most studied is trust. Smith et al. (1996) argued that "trust may be negatively correlated with concerns for information privacy issues", in that individuals with low levels of trust might be more concerned about the use and dissemination of their personal information. Furthermore, it has also been suggested that the more trusting a consumer is, the less concerned he/she would be with respect to the violation of that trust through information privacy issues, such as the careless utilization and sharing of information with undesirable external parties (Gandy, 1993). Furthermore, Milne and Boza (1998) have established

more concrete evidence about the inverse relationship between consumer's trust and privacy concern, and demonstrated that the dimensions of trust and privacy concerns are distinct. The distinction between trust and privacy concerns will be discussed in more details in **Section 2.3**.

Besides the antecedents of privacy concern, prior researches have also examined the impact of privacy concern on consumers' behaviors and future intentions. Stone et al. (1983) posited that consumers with high privacy concerns about a firm's privacy practice would be more likely to reject the idea of disclosing their personal information to the firm in question. Using a sample size of 77 for a preliminary test, Smith, et al (1996) further showed that with higher levels of privacy concerns about firms' information practices, consumers will have stronger intentions to take privacy related actions such as unwillingness to provide information to the organizations. Furthermore, Sheehan and Hoy (2000) has showed that the more concerns the individuals have regarding privacy issues, the greater the tendency that they would adopt behaviors that help them to protect their privacy. Thus, from these studies, we could observe that with high privacy concerns, an individual would be less willing to disclose to a website. More recently, Xu et al. (2003) have also shown that the consumer's privacy concern is positively related to his/her disclosure intention to a website when ways to alleviate the respective dimensions of the privacy concern are provided. Furthermore, they discovered that the bearing that the consumer's privacy concern has on his/her disclosure intention is moderated by his/her level of trust in the website.

Ways to alleviate the privacy concerns of consumers, such as merchant profiling, trust framework, access control, user profiling, anonymity and encryption (Wang et al., 1998; Culnan, 2000; Rennhard et al., 2004), have also been explored. Besides privacy enhancing tools and technologies, self-regulatory privacy regimes have also been introduced in the online firms' operation to alleviate consumers' privacy concern. The self-regulatory regimes were defined by the Fair Information Practices, which included global principles that balanced the hostile interests of both

individuals and online vendors (i.e. the privacy interests of individuals and the legal need of businesses to derive value from consumers' information) (Culnan, 2000).

Due to the increase in the usage of Internet and E-commerce since late 1990s, fair amount of researches have been conducted to explore the usage of the Fair Information Practices in the e-commerce context. For example, researches such as FTC (1998), Culnan (2000), and Shaw (2003) have been conducted to explore how the Fair Information Practices are evident in online firms' posted privacy policies. In addition, other researchers such as Sheehan and Hoy (2000) have discovered that the Fair Information Practices are consistently with the dimensions of consumer's privacy concerns, and would alleviate consumer's privacy concerns if followed closely.

2.2 Trust

Trust has long been studied in various disciplines such as psychology, marketing, organizational science, social science, and lately in information systems and e-commerce. In different disciplines, trust has been conceptualized differently depending on their focus and the phase of trust adopted. Trust is usually abstracted as an expectation (e.g. Gabarro, 1978), a behavior (e.g. Zand, 1972), a belief (e.g. Cook and Wall, 1980; Gefen and Silver, 1999), and behavior intention such as willingness to be vulnerable (e.g. Mayer et al., 1995; Rempel et al., 1985; Mayer and Davis, 1996), or as a willingness to depend (e.g. Gefen, 2000; Gefen, 2002^a; Gefen, 2002^b). This diverse conceptualization of trust is also apparent in the field of information systems and e-commerce. For example studies like that of Jarvenpaa et al. (1998) and McKnight et al. (2002^b) had conceptualized trust as a belief, while other studies like Gefen (2000), Gefen (2002^a), Gefen (2002^b) and Xu et al. (2003) explored trust as a behavioral intention.

Drawing from various disciplines of trust research, where researchers operationalize trust differently, a few common types of trust are identified. Firstly, there is the disposition to trust (i.e. generalized trust/propensity to trust/personality-based trust), where trust is conceptualized to be a belief (McKnight, et al., 1998; McKnight, and Chervany, 2001; McKnight, and Chervany, 2002^a; McKnight, et al., 2002^b). There is also interpersonal trust (i.e. relational trust), where there are numerous conceptualizations of its dimensions. McAllister (1995) conceptualized it as having cognitive and affective foundation; Rempel et al. (1985) conceptualized it to include faith, dependability, and predictability as its dimensions; Johnson-George and Swap (1982) conceptualized it as emotion and reliableness; while Mayer, et al (1995), Bhattacharjee (2002) and McKnight, et al (2002^b) conceptualized it in terms of trustor's beliefs in the trustee's ability, benevolence, and integrity. Other forms of trust include partner trust (Couch et al., 1996; Larzelre and Huston, 1980), network trust (Couch et al., 1996), intraorganizational trust (Gansan and Hess, 1997), interorganizational trust (Gansan and Hess, 1997) and calculus-based trust (Barber, 1983; Shapiro et al, 1992).

Trust is a highly complex multi-dimensional phenomenon, and many researchers in various disciplines have acknowledged that trust is a very confusing and bewildering factor (e.g. Lewis and Weigert, 1985; McKnight et al. 2002^b; etc). According to Mayer et al. (1995), this confusion is due to “the difficulty of defining trust, confusing trust with both its antecedents and consequents, confusing trust with perceived risk, and failure to consider both the trustee and trustor”. To date, there is still no universally accepted definition of trust. However, from a cross-discipline study carry out by Rousseau et al. (1998), it is found that there are two conditions for trust to occur. Firstly, an individual has to be “willing to be vulnerable under the conditions of risks” (Lewis and Weigert, 1985; Chiles and McMackin, 1996; MacCrimmon and Wehrung, 1986). Secondly, there has to be “interdependence, where an individual in a relationship needs to rely on another to achieve his/her interests” (McAllister, 1995, Rousseau and Tijoriwala, 1998).

From the literature review of trust, a few trust production mechanisms have been identified. They include mechanisms like characteristic-based trust, process-based trust, and institutional based trust (Zucker, 1986). To induce trust, “characteristic-based trust focuses on individual commonalities (like cultural similarities) and may be relatively general or specific”. On the other hand, “process-based trust builds on reputation, gift giving and brand names, and is dependent on past transactions, repeated purchases or expected future exchange”. Last but not least, “institutional-based trust induces trust by relying on a formal marketable structure such as institutions and 3rd party guarantors (e.g. TRUSTe) that actually sell certificates pledging integrity, ability and intentions”. Furthermore, from the psychology literature, trust development can be explained as an attributional process. Ferrin and Dirks (2003) have argued in their paper that trust development could be explained by the attribution theory through areas like social perception, self-perception, and attributional biases.

Besides the trust production mechanisms, numerous antecedents of trust have also been identified from the trust literature. One of the most common antecedents that are positively related to trust is familiarity (Luhmann, 1979; Garbarino, 1999; Bhattacharjee, 2002; Gefen et al, 2003), which refers to “one’s comprehension of another’s action/behavior based on prior experiences and interactions”. Prior researches also show that an individual’s disposition to trust, where one has a consistent tendency to be willing to depend on others across situations, has a direct impact on situational-based trust, such as interpersonal trust (Mayer et al., 1995; McKnight, 2001; McKnight et al., 2002^a; McKnight et al., 2002^b). Although similar in some ways, trust and trustworthiness are in fact different (Bierhoff, 1992). According to Bierhoff, trustworthiness refers to the “perceived honesty of the other party” and Mayer et al. (1995), and Mayer and Davis (1999) conceptualized it to include ability, benevolence and integrity. Furthermore, studies like that of Cook and Wall (1980), Lee and Turban (2001) and Sirdeshmukh (2002) have found that trustworthiness to have a

positive direct effect on trust. Other antecedents of trust include motivation (Rempel et al., 1985), privacy concerns (Milne and Boza, 1998), and perceived ease of use (Gefen et al., 2003).

Based on prior researches in various fields, trust has also been found to reduce perceived cost (Ganesan and Hess, 1997; Hosmer, 1995). Furthermore, trust alleviates uncertainty by letting people hold relatively reliable expectation about other people's favorable future actions (Gefen, 2000; Culnan and Armstrong, 1999). Moreover, trust helps to reduce the trustor's perceived risk, and increase his/her willingness to be vulnerable and willingness to take risk in a situation where the behavior of trustee may do them harm (Carnevale, 1995, Gefen, 2000; Culnan and Armstrong, 1999). Also, according to Luhmann (1979), "trust will strengthen the capacity of the present for understanding and reducing complexity". That's to say, trust will strengthen states instead of the events, and makes it possible for individuals to live and proceed in events that involve a great amount of complexity. Since trust is able to reduce complexity of a situation, perceived cost and perceived risk of an individual, it would come as no surprise that trust would be able to reduce the individual's privacy concerns (Gandy, 1993; Smith et al, 1996; Milne, and Boza, 1998), which is a perceived cost itself (Milne, and Gorden, 1993). Besides that, trust has been found to be a significant antecedent of participation/involvement in both online and offline relationship/activities such as disclosure of information (Cozby, 1972; Derlega and Chaikin, 1977; Reichheld and Scheffer, 2000; Xu et al., 2003). Recently in the field of e-commerce, Gefen et al. (2003) found that trust tends to have a positive impact on the website perceived usefulness and intention to use the shopping website. Besides Gefen et al. (2003), numerous studies in e-commerce involve trust, and some of their findings are presented in the table in **Appendix A**.

Besides direct main effects, prior researches have also found that trust can act as a moderator. Several studies (e.g. Dirks, 1999; Kimmel, et al, 1980; Read, 1962; Dirks and Ferrin, 2001) have shown that trust could acts as a moderator between the attitude and behavior of an individual in

various research areas (e.g. organizational science, marketing and negotiation). Recently, in the research area of e-commerce, Xu et al. (2003) have also found that trust is able to moderate the relationship between consumers' reward preferences/privacy concerns and their disclosure intention.

2.3 Trust and Privacy Concerns

“Trust is not about taking risk, but rather it is a willingness to take risk” (Mayer et al., 1995). Across all the definitions of trust, there are normally two major components, namely the interdependence (i.e. in particular the confidence in an exchange partners) and the willingness to rely on such partner (i.e. the willingness to take risk and be vulnerable) (Rousseau et al., 1998).

According to Smith, et al. (1996) and Stone, et al. (1983), information privacy is “the ability of the individual to personally control information about one’s self.” Individuals are usually concerned with an online firm’s information privacy practices, namely with its improper collection and storing of their personally identifiable information, unauthorized internal and external secondary usage of their personally identifiable information, improper access to their personally identifiable information by unauthorized personnel, and the adequacy of its protection of both deliberate and accidental errors in their personally identifiable information.

From the definition of trust, it could be deduced that for trust to take place, confidence in an exchange partner and the willingness to take risk must be present. However, for privacy concerns to take place, only confidence in an exchange partner needs to be present. There is basically no involvement of willingness to take risk in having concern about a particular online firm, unlike the case of having trust. Moreover, trust is reciprocal by nature. That’s to say people comprehend and reflect the trust aimed at them. For example, when a person see others acting in ways that imply

that they trust him/her (like online vendor trusts its consumers by clarifying to them about their information privacy policies, etc), the trustor become more disposed to reciprocate by trusting them more (Carnevale, 1995). However, there is no concrete evidence to show that privacy concerns are reciprocal by nature. Hence, there exist distinct differences between trust and privacy concerns.

Nonetheless, the similarity between trust and privacy concerns should not be overlooked. Both trust and privacy concerns are able to affect the complexity of a situation. Trust will reduce complexity by “ruling out possible, but undesirable and unfavorable, future actions of other people or organizations” (Luhmann, 1979); while privacy concerns might add complexity to the situation since “possible, but undesirable and unfavorable, future actions of other people or organizations”, would be taken into consideration.

Furthermore, both trust and concern could affect the disclosure of information by consumers. (i.e. trust will increase the probability to disclose while privacy concerns would decrease the probability to disclose) However, trust will do something more than just affecting the disclosure of information by consumers. With trust (in particular, with affect-based trust), the relationship between the online firm and consumer will develop and strengthen. For the case of concern, it will not directly lead to the strengthening of the relationship between the online firm and consumer, although it can indirectly negatively affect it through its impact on trust itself.

In conclusion, although there are similarities between trust and privacy concerns, there exist differences between them that make them distinct from each other. The most confusing part is that they are actually strongly correlated to each other (i.e. a high trust will result in a low concern) (Gandy, 1993; Smith, et al., 1996; Milne and Boza, 1998). The main difference would be that with a high trust, it would provide a mechanism that enables the consumer to build a relationship with

the online firm, but with low privacy concerns, the consumer would not be able to directly build a relationship with the online firm. However, low privacy concerns might act as a pre-condition to the building of a relationship.

2.4 Motivation

According to Weiner (1985), motivation is determined by the incentive one can get and the expectancy of getting it. Prior researches have tried to conceptualize the motivation force that provokes the consumer's behavior. In organizational science, Herzberg et al. (1959) constructed a two-dimensional paradigm of factors affecting people's attitudes about work, and put forward the idea that "dissatisfaction at work is more likely to arise from the deficiencies in the work environment (i.e. Hygiene factors, e.g. security, status, salary, supervision, etc), while satisfaction at work is more likely to arise from factors in the job itself (i.e. Motivators, e.g. growth, advancement, responsibility, achievement, etc)". In psychology, Maslow (1970) has examined how human needs affect human decisions, and has suggested that there is a hierarchy of needs which individuals would strive to satisfy. In all, there are five levels of needs (i.e. physiological, safety, social, self-esteem, and self-actualization) and that lower level of needs have to be substantially satisfied before individuals shift preferences to higher level of needs. That's to say an individual would not be motivated to fulfill higher level of needs if those at the lower level are not satisfied. In economics, the Utility theory posits, "individuals would maximize their total utility in making consumption choices" (Stigler, 1950; Lancaster, 1966; Becker, 1993). However, studies based on the Utility theory made the assumption that individuals' decisions are made based on economic criteria (e.g. monetary gain, time saving, etc), and it was pointed out by Katona (1953) that these studies often neglect other types of motivation, such as novelty and altruism that would also influence the individuals' decisions.

As shown, motivation can be conceptualized in many different forms. However, researchers now recognized that motivation has two main types, namely extrinsic and intrinsic motivation (Vallerand, 1997). Primary forms of extrinsic motivation that leads to provision of personal information by consumers include monetary saving (Milne and Gorden, 1993; Phelps, et al., 2000), time savings (Chandon, et al., 2000; Holbrook, 1999), quality (Chandon, et al., 2000; Holbrook, 1999), self-enhancement (Grubb and Grathwohl, 1967; Richins, 1994) and social adjustment (Shavitt, 1990); while primary forms of intrinsic motivation includes pleasure (Holbrook, 1999), novelty (Hirschman, 1980) and altruism (Goodwin, 1991).

Personality, as noted by Judge and Ilies (2002) is complex and multi-dimensional, and there exists some thousands of personality measures in the literature. However, one of the most well-known and commonly cited personality taxonomy is the Big Five traits, which includes “surgency (talkative, assertive, energetic), agreeableness (good-natured, cooperative, trustful), dependability (conscientious, responsible, orderly), emotional stability (calm, not neurotic, not easily upset) and culture (intellectual, cultured, polished, independent-minded)” (Tupes and Christal, 1961; Goldberg, 1981; Oliver, 1990, McAdams, 1992). Prior researches in psychology and organization science such as Judge and Ilies (2002), who conducted a meta-analysis, found that the Big Five traits are strongly correlated with various measures of the motivation. This suggests that an individual’s personality is an important antecedent of his/her motivation.

In recent years, researchers such as Tam et al. (2002) and Xu et al. (2003) have been exploring with the idea of motivating consumers to disclose their personal information to websites, through the use of different forms of benefits. Several theories such as Social Exchange Theory, and Resource Exchange Theory support this idea. Specifically, Social Exchange Theory posits, “an individual would decide whether or not to perform a social act based on an assessment of both the rewards and costs that are associated with the act itself” (Emerson, 1979; Homans, 1950, 1961;

Thibaut and Kelley, 1959). That's to say, after taking into considering the provision of the rewards (e.g. monetary rewards, time savings, etc) and alleviation of the costs (e.g. information privacy rights), an individual might disclose his/her personal information to a website if the situation is favorable to him/her. Similarly, the Resource Exchange Theory posits "individuals will trade personal information for other resources during marketing transactions" (Brinberg and Wood, 1983; Hirschman, 1980). According to Berg and Wiebe, 1993, a resource includes both rewards and punishments, and is classified into the categories of love, status, information, money, goods and services. In relation to the resource theory, Berg (1984) and Berg and McQuinn (1986) found that the amount of information a person is willing to disclose is positively related to the amount of resources he/she receives from the receiver of the information. Hence, from these theories we could deduce that in addition to privacy concerns, motivation in terms of rewards do indeed play a part in an individual intention to disclose.

2.5 Outcomes in E-Commerce Research

As presented in the above literature reviews, researchers have investigated numerous factors/constructs (e.g. trust, perceived risk, privacy concerns, motivation, familiarity, etc.) in e-commerce context. The premise of this section aims to fuse the assortment of homogenous dependent variables across the wide continuum of literature. From the e-commerce literature, a list of studies in e-commerce with their respective dependent variables and findings has been constructed and presented in **Appendix B**.

One of the most frequently explored dependent variable in e-commerce is individual's disclosure intention of his/her personal information (i.e. self-disclosure). According to self-disclosure literatures, self-disclosure is reciprocal in nature (Cozby, 1972; Taylor and Altman, 1989; Rubin, 1975; Worthy et al, 1969), and is defined as "the act of being willingly in making personal

information about the discloser available to the recipient of the information” (Collins and Miller, 1994; Worthy et al., 1969). This willingness to disclose personal information to a website involves risk, and increases the vulnerability of the discloser (Cozby, 1972; Hinde, 1997). Studies in e-commerce that have explored self-disclosure as an dependent variables include Smith et al (1996) and Phelps et al (2000), where they found that privacy concern has a negatively impact on an individual’s disclosure intention of his/her personal information. Furthermore, it has been found that with trust in an online vendor, consumers would be more willing to disclose their personally identifiable information to its website (Gefen, 2000; Bhattacharjee, 2002). Moreover, researchers in the field of e-commerce have also found that an individual’s willingness to self-disclosure to a website is positively related with tangible benefits like discounts, coupons, offers and bonuses (Goodwin, 1991, 1992; Nowak and Phelps, 1995;) and intangible benefits like convenience, greater selection and quality of products and services (Milne and Gordon, 1993; Culnan, 1993, Phelps et al, 2000).

Besides self-disclosure, studies in e-commerce have also explored dependent variables such as the acceptance of e-commerce/Internet and usage/adoption intention of the website/e-commerce/Internet. Examples of such studies, which explored the dependent variables using the Technology Acceptance Model (TAM), include Moon and Kim (2001), Gefen and Straub (2000), Chen et al. (2002), Heijden (2003), Gefen et al. (2003), Gefen (2003), Wu and Wang (2003), and Pavlor (2003). Other frequently explored dependent variables in the field of e-commerce include, online purchase intention (Jarvenpaa et al., 2000; Grazioli and Jarvenpaa, 2000; Gefen, 2000; Gefen and Straub, 2002; Shim et al., 2001; Belanger et al., 2002; George, 2002; Heijden et al., 2003), and willingness to transact online (Bhattacharjee, 2002; Pavlou, 2002).

3 Research Model

After conducting a thorough literature review, a conceptual framework was developed. This section details the study's specific assumptions and its research model. In addition, the findings of a pilot study, which was carried out using data from a related previous work (Xu et al, 2003), would be highlighted in the last part of this section.

From a previous work, which was done as my Honours Year Project (Xu et al., 2003), it was found that besides having a distinct direct main effect on disclosure intention, trust also plays a significant role in moderating the relationship between a consumer's reward preference and his/her disclosure intention to a website. In addition, trust was found to play a moderating role in the relationship between a consumer's privacy concern and his/her disclosure intention. This paper seeks to build upon the previous research model (Xu et al., 2003), and explores in depth the interactions and relationships between various factors, which would affect consumers' intentions to disclose to a particular website. The factors include consumer trust, reward preferences, perceived reward values, dispositional privacy concerns, and specific privacy concerns. Contributions of this paper as compared to the previous work (Xu et al., 2003) include that of embracing both dispositional and situational factors. Moreover, mediating variables have been introduced to seek better explanation and understanding of the consumer's online disclosure intention phenomenon. Furthermore, with the insights obtained from the previous research, this paper seeks to explore in depth the moderation roles that trust in the particular website has in inducing consumers' disclosure intention. The paper's research model is shown in **Figure 3.1**.

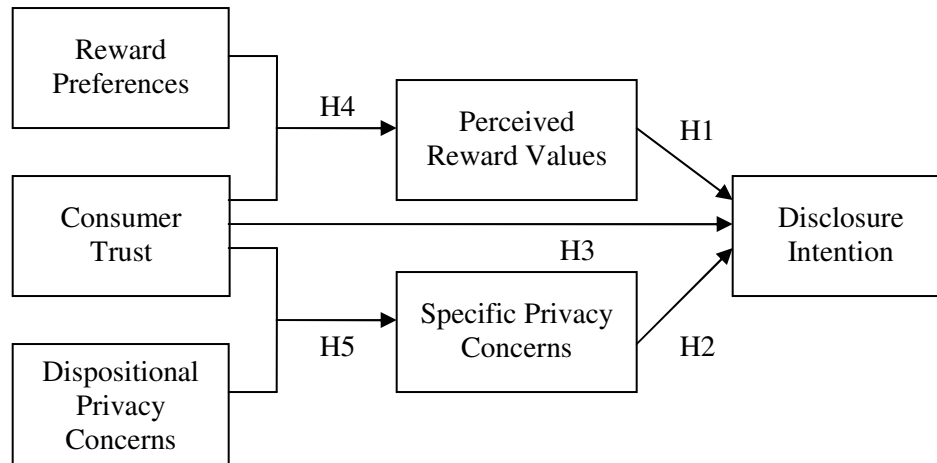


Figure 3.1 – Research Model¹

3.1 Disclosure Intention

From the literature review, several dependent variables have been identified in e-commerce context, including consumers' willingness to disclose their personal information to websites. Specific personal information from consumers is invaluable, and is certainly useful to online vendors, as it would enable them to track and analyze individual consumer's purchases and preferences. This would in turn help the vendors to identify the best prospect and create promotions and rewards programs to attract new customers, and increase existing customers' loyalty towards the vendors (Hughes, 1994). With the birth of e-commerce and Internet, it has provided online vendors with a new way to solicit personal information from consumers.

Psychologists such as Worthy et al. (1969) were among the first to introduce the concept of self-disclosure. Initially, self-disclosure was studied in an offline context and was depicted as "an act of making the discloser's personal information willingly available to the recipient of the

¹ This research model is a high level abstraction. Subsequently, the rewards (H1, and H4) and costs (H2, and H5) components of the research model will be estimated separately using first order constructs (e.g. reward preferences will be replaced with one of the 7 first-order constructs, such as preference for monetary savings, time savings, pleasure, etc.). To illustrate, an estimation of the model will be testing for the hypotheses: Perceived value of the monetary savings is positively influenced by the preference for monetary savings and consumer trust (H4), which will in turn affect the consumer's disclosure intention (H1).

information” (Worthy et al., 1969; Collins and Miller, 1994). Since the late 1990s, there has been a surge in the number of researches revolving consumer’s disclosure in the area of e-commerce. The studies attempted to explore and explain the phenomenon of consumers’ online disclosure (e.g. Smith et al., 1996; Phelps, et al., 2000; Gefen, 2000; etc.).

Prior researches have found that self-disclosure is reciprocal in nature (Worthy et al., 1969; Cozby, 1972; Rubin, 1975; Taylor and Altman, 1989), in which “an individual would attempt to respond at the same level of intimacy and quantity to the disclosure of another party”. However, in this research study, the reciprocal nature of self-disclosure would not be in the scope of the study. Furthermore, due to the infeasibility and cost of asking subjects to undertake the actual behavior of disclosing personal information to a particular website, this study would only undertake the measurement of the disclosure intention of online consumer. The disclosure intention of an online consumer is conceptualized as the consumer’s willingness to provide his/her personal information to a particular website, and this intention to disclose would involves risk and increased the vulnerability of the consumer (Cozby, 1972; Hinde, 1997).

3.2 Reward Values and Specific Privacy Concern

Social Exchange Theory (SET) (Thibaut and Kelley, 1959; Homans, 1961; Kelly and Thibaut, 1978; Kelley, 1979) has posited that the development of a social relationship is determined by both reward and cost factors. In accordance with this theory (SET), “consumers would participate in an activity only if outcomes from the activity are considered satisfactory to the consumers (i.e. if the consumers’ perceived subjective expected rewards value exceeds their expected costs) (Blau, 1964; Homans, 1961), or at a minimum level that fulfilled their expectations and surpass their opportunity cost” (Thibaut and Kelley, 1959). The rewards conceptualized in the Social Exchange Theory (SET) are the “pleasures, satisfactions, and gratifications that an individual enjoys”, while

the costs are conceptualized as “any factors that operate to inhibit or deter the performance of a sequence of behavior that sustains the relationship” (Thiaut and Kelly, 1959).

The relationships between consumers and online vendors could be viewed as a type of social relationship (Tam et al., 2002; Xu et al., 2003), where there is no explicit detailed contract that bind both the consumers and vendors, or provide a comprehensive legal protection to the parties involved (Gefen et al., 2003). Although there is no explicit contract binding both the consumers and online vendors, many studies view the consumers’ disclosure of information as an implied social contract (e.g. Milne and Gordon, 1993; Culnan, 1995; Milne, 1997; etc.). Hence, the Social Exchange Theory and its extension, the Theory of Response Behavior (Dillman, 1978), are found to be applicable to the disclosure relationship between the consumers and the online vendors in the e-commerce context. In disclosing personal information to an online vendor, a consumer would face current cost factors, such as specific privacy concerns and the fear of being exploited, and might also expect future unguaranteed rewards, such as monetary savings and time savings. The interactions between the costs incurred and rewards received would exhibit the nature of interactions among the costs and rewards in Social Exchange Theory (SET). When the consumers perceived a high reward value from the rewards provided by the online vendors, they would exhibit the behavior of disclosing personal information. On the other hand, cost factors such as specific privacy concerns would inhibit the consumers’ behaviors and intentions of disclosing personal information to online vendors. In accordance with Social Exchange Theory (SET) and Theory of Response Behavior, the consumers’ likelihood of information disclosure should increase if the online vendors attempt to increase the consumers’ perceived reward values (reward factor) and reduce their specific privacy concerns regarding the vendors’ information privacy policy (cost factor).

In general, rewards that could be used to induce online consumers to disclose their personal information could be classified into two main forms; namely extrinsic and intrinsic in nature (Vallerand, 1997; Tam et al., 2002; Xu et al., 2003). Extrinsic rewards are distinguishable outcomes that could be attained from the performance of an activity or action and denote a “means-to-an-end” relationship. “Extrinsically rewarded actions, such as the disclosure of personal information, are performed as these behaviors might be valued by the significant others whom they feel attached or related” (Davis et al., 1992; Deci and Ryan, 2000). On the other hand, intrinsic rewards are those that would allow an individual to “seek out novelty and challenges, explore, learn, and to extend and exercise one’s capacities”. “An individual would only be intrinsically rewarded if the activities hold intrinsic interest, with the appeal of novelty, challenge or aesthetic value” (Deci and Ryan, 2000).

Based on an extensive literature review, Tam et al. (2002) constructed a conceptualized classification of seven types of extrinsic and intrinsic motivations, and developed an instrument to measure reward preference, which was empirically tested and validated. In particular, extrinsic rewards that could be offered to online consumers would include that of monetary savings, time savings, self-concept enhancement, and social adjustment (Tam et al., 2002). In addition to extrinsic rewards, the online vendors through their websites could also offer intrinsic rewards such as pleasure, novelty, and altruism. To be consistent with the prior researches, the present study would make use of the seven types of rewards as conceptualized and empirically tested in the researches conducted by Tam et al. (2002) and Xu et al. (2003) (See **Table 3.1** and **Table 3.2**).

Table 3.1 – Extrinsic Rewards

Extrinsic Rewards	Definition	Example
Monetary Savings	The price reductions of products/services, offering of free products, and the provision of refunds/rebates on subsequent purchases (Schindler, 1998; Chandon et al., 2000)	Redemption vouchers
Time Savings	The gain in both efficiency and convenience, with reductions in either time or effort (Holbrook, 1999; Chandon et al., 2000)	Customizable website/portal
Self-Concept Enhancement	The boost to enhance the reflection of oneself or the perception about how one appears to others (Grubb and Grathwol, 1967; Shrauger and Schoeneman, 1978; Soloman, 1983).	A premier membership card/credit card, which is uncommon to all.
Social Adjustment	The establishment of personal identity or achievement of social integration in a group setting (Shavitt, 1990).	Membership with a valued virtual club

Table 3.2 – Intrinsic Rewards

Intrinsic Rewards	Definition	Example
Pleasure	State of enjoyment that is derived from a product/service (Mehrabian and Russel, 1974)	Enjoyable and interactive animation
Novelty	Satisfaction of the intrinsic needs for exploration, variety, and information (Maddi, 1968; Kahn and Raju, 1991).	Opportunities to explore and process interested but unfamiliar information or knowledge
Altruism	The sense of motivation from the enhancement of the well-being of others, even at the expense of one own welfare (Baumeister, 1982; Eshel et al., 1998).	Donation to charity

Extrinsic rewards have been found to be useful in inducing consumers to disclose their personal information (Westin, 1967; Dillman, 1978; Chebat and Cohen, 1993; Tam et al., 2002; Xu et al., 2003). In particular, Tam et al. (2002) and Xu et al. (2003) found that extrinsic rewards that are able to induce consumer's disclosure behavior include monetary savings, time savings, self-concept enhancement, and social adjustment. In addition to extrinsic rewards, the provision of

intrinsic rewards, such as pleasure, novelty, and altruism, has also been found to induce consumers to disclose their personal information (Tam et al, 2002; Xu et al., 2003).

In addition, Resource Exchange Theory has given insights that when online consumers are given resources that they value and treasure, they would in turn be more willing to disclose their personal information to the online vendors in exchange for a greater amount of the valued resources (Brinberg and Wood, 1983; Hirschman, 1980). In particular, the higher the amount or value of the resources the consumers received, the higher their intention to disclose personal information to the online vendors (Berg and McQuinn, 1986). This phenomenon holds true even for resources such as information, love, extrinsic and intrinsic rewards, (Berg and Wiebe, 1993).

Although both empirical findings and Resource Exchange Theory have shown consumers' disclosure behaviors could be induced with rewards, insights from Benefit Congruency Principle (Chandon et al., 2000) and General Principle of Compatibility (Tversky et al., 1988) have suggested that not every consumer would react similarly to the same rewards provided by online vendors. In other words, not every reward offered by the online vendors would have a high enough reward values to induce the disclosure behaviors/intentions of consumers. This view is further substantiated by Maslow's Hierarchy of Needs, which advocated that the perceived values of rewards such as self-concept enhancement would not be high if the consumers have not satisfied or fulfilled lower level of needs like that of physical needs (Maslow, 1970). For example, given a redemption voucher of S\$30 in return of the disclosure of information, a consumer with a high preference for monetary savings would consider this reward to have a higher value than one who has no preference for money savings, but instead have a preference for other rewards such as pleasure. Hence, there are evidences to support the notion that it is in fact the consumers' perceived values of the given rewards that would ultimately influence their online disclosure intentions. The consumers' perceived values of the offered rewards would be conceptualized in

this study as situational in nature, and are expected to be context-based (i.e. the perceived reward values are expected to vary in dissimilar situations, e.g. in situation where same rewards were given by different online vendors).

Thus, in accordance with prior empirical researches, Resource Exchange Theory, Social Exchange Theory, and Theory of Response Behavior, the extent to which a consumer would be willing to disclose his/her personal information to an online vendor would depend on his/her perceived value of the offered reward.

***H1:** A consumer would be more willing to disclose personal information to the online vendor if he/she perceived a high reward value of the offered reward.*

From prior researches, it was found that consumers' privacy concerns come into play when they could limit the accessibility and disclosure of their personal information (Culnan, 1993; Milne and Gordon, 1993). Accordingly, Smith et al. (1996) has advocated that information privacy is the "ability of the individual to personally control one's own information". In a bid to better understand the different privacy concerns of consumers, there also exists an extensive body of research that explore the primary dimensions underlying concept of privacy concerns (e.g. Prosser, 1960; Stone and Stone, 1990; Smith et al., 1996; Wang et al., 1998, etc.). In particular, after undergoing an extensive review of all privacy literatures available, Smith et al. (1996) identified four central dimensions of an individual's privacy concerns about a company's information privacy practices, which were subsumed into this study's conceptualization of consumers' privacy concerns in the online vendors' information privacy practices. This conceptualization of the primary dimensions of privacy concerns by Smith et al. (1996) was later validated and empirically tested to be reliable and distinct by Stewart and Segars (2002). The four dimensions of privacy

concerns include improper collection, errors in storing, unauthorized secondary usage, and improper access.

Improper collection refers to “concerns regarding excessive collection of personal information such as information about the consumers’ personalities, background and actions, with or without their knowledge”. Errors in storing refer to “the feeling of uneasiness regarding insufficient protection against both deliberate and accidental errors in recording and collection of the personal information”. Unauthorized secondary use of information refers to “the usage of information for other purposes other than its primary intended reasons”. The unauthorized secondary usage could involve both unauthorized internal and external parties. Last but not least, improper access refers to “concerns regarding unauthorized access to a consumer’s personal information” (Smith et al., 1996).

Privacy concerns could be viewed as a cost factor that could potentially restrain consumers from disclosing their personal information to online vendors (Culnan and Armstrong, 1999). In accordance with Social Exchange Theory (SET) and Theory of Response Behavior, to induce the disclosure tendency of consumers, the cost factor, i.e. consumers’ specific privacy concerns regarding the vendors’ information privacy practices, should be minimized (Thibaut and Kelley, 1959; Dillman, 1978). Furthermore, in situations where the consumers possessed a high level of privacy concerns regarding the online vendors’ information practices, they would have doubts about how the vendors would handle their personal information, and would perceive the acts of disclosure of their personal information to be risky. This would in turn lower consumers’ willingness to disclose personal information to the online vendors, and lead to a higher possibility that the consumers would refuse to participate in activities that solicit personal information from them (Smith et al., 1996; Sheehan and Hoy, 2000; Godwin, 2001; Stewart and Segards, 2002).

As each consumer would have different personality and dispositional traits, it would come intuitively that different consumers would have different level of concerns for each type of privacy concerns subsumed in this study (i.e. improper collection, errors in storing, unauthorized secondary usage, and improper access). For example, a consumer might be very concerned with an online vendor's practices regarding the issue of excessive collection but is indifferent to the other 3 types of concerns. Hence, if there are concerns in the online vendors' information privacy practices regarding a particular aspect (i.e. improper collection, error in storage, unauthorized secondary usage, and improper access), consumers would be less willing to disclose their personal information if they have high level of specific privacy concerns regarding that aspect (Phelps et al., 2000; Stewart and Segards, 2002; Xu et al., 2003). Studying each type of privacy concerns individually is beneficial as it would identify those concerns that are regarded as relatively more important, and would enable those practitioners with limited funding to resolve the most important privacy issue on hand. As such, the present study adopts the approach of studying each type of privacy concerns individually, and conceptualizes that the consumers' specific privacy concerns are contextual in nature and not consistent across various situations involving different vendors.

Hence, from the above argument supported by Social Exchange Theory (SET), Theory of Response Behavior, and the results of the empirical studies presented, it can be inferred that the consumers' willingness to disclose personal information would depend on their level of concern in each type of privacy concerns that they have with regards to the online vendors' information privacy practices. For example, a consumer would be willing to disclose his/her information to a online vendor if he/she has a low level of privacy concerns in the aspect of improper collection with regards to the vendor's practice in assuring the absence of excessive collection from the consumer.

H2: A consumer would be more willing to disclose personal information to the online vendor if he/she has a low level of specific privacy concern in the online vendor's information privacy practices regarding the particular type of concern.

3.3 Consumer Trust

From prior researches, trust has been found to be vital in many business relationships (e.g. transactional relationships), to the extent of determining the nature of the businesses and social order (Blau, 1964; Fukuyama, 1995; Luhmann, 1979). E-commerce is considered to be Internet businesses due to the presence of risk that is similar to any other business relationships. Furthermore, there exists transactional relationship, which involves business to consumer, business to business, government to consumer and even government to business. Thus it would come to be of no surprise that trust would be vital to both e-commerce and the activities that are vital in making Internet businesses a success.

From previous researches, trust is found to be highly complex and has many different conceptualizations, depending on the context and interests of the studies. From the literature review, studies in e-commerce context usually conceptualized trust as a dispositional belief (e.g. Jarvenpaa et al., 1998; McKnight et al., 2002^b), a situational belief (Gefen, 2000; Gefen, 2002^a; Gefen, 2002^b; Xu et al., 2003), or as a belief in the trustworthiness of the online vendor, which involves the beliefs in the vendor's ability, integrity, and benevolence (Mayer et al., 1995; Jarvenpaa et al., 1998).

From the literature, it has been revealed that there are numerous conceptualizations of interpersonal trust. In particular, McAllister (1995) conceptualized interpersonal trust to consist of two major components, cognition-based trust and affect-based trust (Lewi and Wiegert, 1985;

McAllister, 1995). Cognition-based trust is grounded in “individual beliefs about peer reliability and dependability”, while affect-based trust is grounded in “reciprocated interpersonal care and concerns” (McAllister, 1995).

In this study, consumer trust is conceptualized as “the willingness of a consumer to be vulnerable, in taking a risky action and depend on an online vendor, based on the expectations that the vendor would not perform an undesirable action (e.g. infringe the privacy of the individual), irrespective of the ability to monitor and control the actions of the vendor” (Mayer, et al., 1995; McAllister, 1995). This definition is in line with some studies in e-commerce context, e.g. Lee and Turban (2001) and Xu et al. (2003). Moreover, consumer trust in this paper is conceptualized to be interpersonal and situational in nature, and as a general overall belief in an online vendor (Jarvenpaa et al., 1998; McKnight et al., 1998; Gefen, 2000); as opposed to specific beliefs in a vendor’s competence (or ability), integrity, and benevolence that leads to the consumer’s trusting intention (McKnight et al., 2002^b). As consumer trust is conceptualized as situational in nature, a consumer’s trust would be expected to vary across different situations, and maybe even vary across different online vendors. Furthermore, the present study’s focus is not on building an existing long-term buyer-seller relationship between a consumer and an online vendor. Thus, emotional investments in trust relationship in which genuine care and concern would be shown for the other party, is not expected. Instead, it is foreseen that cognition-based trust would account for a major part in the consumer trust, since it could be formed quickly due to the social categorization, reputation, illusions, dispositions, and institutional structures (McKnight et al., 1998; McKnight et al., 2002^b).

As argued in the **Section 3.2**, online consumers’ disclosure intentions are influenced by both perceived reward values and specific privacy concerns that exist in their courses of actions. In addition to perceived reward values and specific privacy concerns, extensive bodies of research

have reported that consumer trust also played a part in affecting consumers' intention to disclose personal information (e.g. Culnan and Bies, 2003; Schoenbachler and Gordon, 2002). Consumer trust is able to reduce the complexity of a situation that involves the disclosure of personal information to the online vendors, "by ruling out possible, but undesirable and unfavorable, future actions of the vendors" (Luhmann, 1979). Thus, with the perception that the online vendors would not behave in a way that will harm their consumers, this reduction of complexity in the situation under the presence of trust, would in turn help in inducing disclosure tendency of the consumers.

The action of disclosing one's personal information to an online vendor involves risk and increases the vulnerability of the discloser (Cozby, 1972; Hinde, 1997). Consumer trust is expected to bring about risk-taking behaviors or intentions of consumers, such as disclosure tendency, due to the fact that with the existence of trust in an online vendor, it would tend to lower the perception of risk in a consumer (Javenpaa et al., 2000; Mayer et al., 1995; McKnight et al., 2002^b; Yousafzai et al., 2003) and cause a "leap in faith" (Lewis and Weigert, 1985). In most cases, consumers would have to make the choice of disclosing their personal information based on deficient information in regards to the online vendors and non-objective evaluations of risks such as privacy concerns. Thus, in order for consumers to disclose their information, they must be willing to allow themselves to be vulnerable to the risks involved in the actions, which would reflect upon the amount of trust the consumers have in the online vendors. This form of consumer trust, also known as initial trust by some other researchers (McKnight et al., 2000; 2002^a; 2002^b), is able to form quickly where consumers do not have prior experience and have only limited information about the online vendors. This is due to the fact that it is formed mainly by cognition-based trust, which just needs to find "good reasons" to trust the trustee (McAllister, 1995). In fact, Corcoran (1988) had empirically shown that consumers would trust the online vendors with a "good reason", like that of an assurance of confidentiality with an online privacy statement, and lead to higher disclosure tendencies.

In the context of e-commerce, an extensive body of researches has also found that consumer trust alone would provoke consumers to undertake risk-taking behaviors like disclosure tendency, irrespective of whether there are efforts to provide rewards or alleviate the risks involved in the course of actions (Gefen, 2000; Bhattacharjee, 2002; Schoenbachler and Gordon, 2002; Culnan and Bies, 2003; Xu et al., 2003). With the above reasoning, it could be deduced that consumer trust is likely to have a direct impact on a consumer's intention to disclose his/her personal information to an online vendor.

H3: *A consumer would be more willing to disclose personal information to an online vendor if he/she has trust in the vendor.*

3.4 Reward Preferences and Dispositional Privacy Concerns

The dispositional perspective of explaining human behaviors is one of the classical approaches to study humans' personality in psychology. In essence, theories adopting the dispositional perspective tried to explain human tendencies to "perceive, think, and behave in certain fairly consistent ways across time and situations" (Aiken, 1993). According to Aiken (1993), a classical assumption of dispositional theories regarding personalities is that an individual's behavior is influenced to a great extent by his/her dispositional traits in a consistent way across different situations. However, dispositional theories have acknowledged that situational factors are also important in explaining the behavior. In fact, psychologists have discovered that the interactions between both dispositional and situational factors could determine a consumer's behavior (Mischel, 1990; Aiken, 1993). Hence, to better and fully explain a consumer's behavior in a specific situation, it is important to note that the behavior is caused by a multitude of factors, which include both the personal characteristics (dispositional factors) and the nature of the situation in which the behavior occurs (situational factors).

Taking the dispositional perspective, an individual's preference for the kind of rewards is conceptualized to be intrinsic qualities of mind and character, and is fairly consistent across both time and different situations (Aiken, 1993). The General Principle of Compatibility has advocated that "consumers would tend to associate a higher value with an object if it is compatible with and similar to their preferences" (Tversky et al., 1998). Furthermore, the Benefit Congruency Principle argued that "if the rewards offered by the vendors are congruent to that of the consumers' preference, events such as sales promotion and soliciting of information, would be more effective due to the consumers' higher perceived value of the offered rewards" (Chandon et al., 2000). Motivation theories like that of Maslow's hierarchy of needs have also given insights to the relationship between a consumer's preference for reward and his/her perceived value of the reward given. In particular, Maslow's Hierarchy of Needs have posited that a consumer's perceived value of rewards such as self-concept enhancement would not be high if he/she had not satisfied or fulfilled his/her lower level of needs (Maslow, 1970). Having not been able to meet his/her lower level of needs such as that of physical needs (e.g. food, water, money, etc.), a consumer's intrinsic qualities of mind and character would work in such a way that he/she would have a higher preference for rewards that would help to fulfill his/her physical needs. Thus, with the presence of high preferences for rewards that would satisfy his/her physical needs, the consumer would have higher perceived values for rewards such as that of monetary form, and have lower perceived values (i.e. indifferent) for other rewards such as self-concept enhancements or opportunities for self-actualization. Therefore, it could be inferred that there is a positive direct relationship between a consumer's reward preference and his/her respective perceived reward value.

Consumer trust, which is conceptualized in this study as a situational factor, is predicted to have a moderation effect on the relationship between the consumers' reward preferences and their perceived values of the rewards. With high level of trust in the online vendors, there would be a reduction in the amount of anxiety and uncertainty that are associated with the dealings between

consumers and online vendors (Goffman, 1971; Zucker, 1986; Sztompka, 1999; Jarvenpaa et al., 2000; Yousafza et al., 2003). Furthermore, consumers with high trust in the vendors would feel secure and hold consistent positive expectation that the vendors could be counted and relied on (Rempel et al., 2001). Hence, the presence of trust would help in the reduction of the consumers' doubt in the vendors' actions (Benton et al., 1969), leading them to perceive that they would have a higher probability of getting the promised rewards, and therefore a relatively higher expected gain. With the perception of lower level of risk and higher expected returns under the presence of trust, consumers would in turn demand less rewards from the vendors due to the risk-return tradeoffs analysis (Tversky et al., 1988). This lower demand in rewards from trusted vendors is only possible on the basis that the consumers perceive higher values for the rewards provided by the vendors that they trust. This view is also in accordance to the findings of Kahneman and Tversky (1979), Kahneman and Tversky (1982), and Kahneman and Tversky (1984), which discovered that with the perception of a higher probability of getting the rewards under the presence of high trust in online vendors, consumers would perceive a relatively higher expected gains with the rewards offered, and in turn have higher perceived values of the offered rewards.

In addition, Luhmann (1979) and the Theory of Response Behavior (Dillman, 1978) have discovered that consumer trust in an online vendor would be able to reduce the complexity of a situation by “ruling out possible, but undesirable and unfavorable, future actions of the vendors”, such as not providing the consumer with the promised reward. With the reduction in complexity in the situation due to the trust in online vendors, consumers would then rule out the possibility that the vendors might break their promises in giving the rewards after they undertake the disclosure behavior (i.e. perceived higher probability of getting the rewards). In observing the risk-return tradeoffs (Tversky et al, 1988), the consumers would thus perceive a higher value for the rewards from trusted online vendors, and make it possible for them to undertake a smaller threshold amount of rewards before they would undertake the risky disclosure behavior.

From the above argument, it can be deduced that consumer trust in the online vendors might moderate, and strengthen the relationship between the consumers' rewards preferences and their perceived values of the rewards given by the vendors. In other words, under the presence of a high consumer trust, the synergy between the trust and the high preference for the reward given by the vendor, would lead to a relatively higher perceived value of the preferred reward. Taking the reward of a 30 dollars voucher in return for the consumer's disclosure of personal information as an example; with a high level of trust in the vendor, the consumer, who has low preference for monetary savings, would perceive a moderate to high reward value. In contrast, under the presence of low trust in the vendor offering the same monetary saving reward, the same consumer, who has a low preference for monetary savings, would perceived a very low value for the reward and might not even disclose his/her information to the vendor. Hence, the relationship between reward preferences and perceived reward values could be strengthened under the presence of consumer trust.

H4: The relationship between a consumer's reward preferences and his/her perceived value of the reward given by an online vendor would be stronger under conditions of high consumer trust than low consumer trust.

Taking the dispositional perspective, dispositional privacy concern is conceptualized to be the extent to which a consumer display a general uneasiness of his/her "ability to personally control his/her own personal information" across a broad spectrum of situations and vendors (Smith et al., 1996). In accordance to Smith et al. (1996)'s conceptualization of privacy concerns, a consumer's dispositional privacy concerns in this study is conceptualized to consist of 4 types of concerns (i.e. improper collection, errors in storing, unauthorized secondary usage, and improper access), and is posited to be consistent across all situations.

In psychology literature, a number of studies have found that dispositional factors tend to be consistent across situations, and would result in consistent behavior (e.g. Bem and Allen (1974), Block (1977), Underwood and Moore (1981), etc.). According to Mischel (1986)'s work that undertook a social learning approach, it was found that an individual's dispositions were formed over a long period of time, and his/her behavior in a specific situation could be predicted by his/her dispositions, which would also take account his/her learning history in similar situations. Furthermore, in a demonstration that dispositional factors would have a direct effect on their corresponding situational factors, there exists an extensive body of research that have proven the existence of a direct relationship between a consumer's dispositional trust and situational trust (e.g. Gefen, 2000; McKnight and Chervany, 2001; McKnight et al., 2002^a; McKnight et al., 2002^b; etc.). Following this line of argument, a consumer's disposition privacy concerns regarding information privacy practices are believed to have an influence in his/her respective specific privacy concerns regarding a particular online vendor's information privacy practices.

However, this relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns is believed to be moderated by the presence of consumer trust. Under the presence of trust in the online vendors, consumers would feel confident that the vendors would not abuse the trust or take advantage of them, and thus have lower perceived risks with regards to the dealings with the vendors (Luhmann, 1988; Gandy, 1993; Jarvenpaa et al., 2000; Rempel et al., 2001; Bhattacharjee, 2002; May and Scull, 2002; Yousafzai et al., 2003). Besides lowering consumers' perceived risks, the presence of trust would also leads to a reduction in the anxiety and uncertainty associated with the dealings between the consumers and the vendors (Goffman, 1971; Zucker, 1986; Morgan and Hunt, 1994; Sztompka, 1999). Hence, due to the lower perception of risks and uncertainty under the presence of consumer trust, the consumers would be less concerned and wary with the online vendors' information privacy practices. This view is consistent with previous research studies, such as Kahneman and Tversky (1979), Kahneman and Tversky (1982),

and Kahneman and Tversky (1984). In particular, they have found that with lower level of perceived risks under the presence of high trust, consumers would perceive that they would incur a relatively smaller expected privacy costs. These relatively smaller expected costs would then result in lower levels of specific privacy concerns that consumers have regarding the online vendors' information privacy practices.

In addition, consumer's trust in an online vendor is able to reduce the complexity of the situation, and would help to reduce the specific privacy concerns that the consumer has with regards to the vendor's information privacy practices (Luhmann, 1979). This is because the consumer would not perceive that the vendor would perform any undesirable future actions that would increase his/her risk regarding improper collection of, errors in storing, unauthorized secondary usage of, and improper access to his/her disclosed personal information. Furthermore, it has been observed that in a trustor-trustee relationship, the trustor would not be wary of the trustee's actions, and would be more willing to accommodate to the trustee if the trustee is believed to be reliable and trustworthy (Schur and Ozanne, 1985). That's to say, regardless of their dispositional privacy concerns, consumers would have lower specific privacy concerns regarding the vendors' information privacy practices and would be more willing to accommodate to the requests of the online vendors (e.g. include the soliciting of personal information from the consumers), if they perceive that the vendors are reliable and trustworthy.

Furthermore, there exists an extensive body of empirical studies, which has observed that regardless of the level of dispositional privacy concerns, consumers' specific privacy concerns would be reduced under the presence of consumer trust (e.g. Smith et al., 1996; Milne and Boza, 1998; etc.). Empirical studies in the e-commerce context such as Xu et al. (2003), have also found that consumer trust is able to suppress the influence that disposition privacy concerns has on situational factors. A consumer with a high dispositional privacy concern will generally be feeling

uneasy regarding any vendor's information privacy practices, and this would in turn lead him/her into having a high level of specific privacy concerns in a particular vendor's information privacy practices in a given situation. However, with the presence of high consumer trust in the vendor, the complexity of the whole situation would be greatly reduced (Luhmann, 1979) and the consumer would be made to believe that unfavorable future actions regarding information privacy issues would not surface. Therefore, the presence of high trust would in turn help to reduce the level of the consumer's specific privacy concerns, and increase the consumers' tendency to disclose. Hence, with the above argument, it could further substantiate that under the presence of consumer trust, the relationship between consumers' dispositional privacy concerns and specific privacy concerns would be weaker.

Taking an example of a situation where a consumer has a high level of dispositional privacy concern regarding the issue of unauthorized secondary usage of his/her personal information. Under the presence of low trust in an online vendor, the consumer would believe that the vendor is unreliable and might even sell or use his/her personal information for other secondary purposes other than the primary intention. Thus, the consumer with high level of disposition privacy concerns regarding unauthorized secondary usage in general would have a high level of specific privacy concerns regarding the vendor's information privacy practices in unauthorized secondary usage of information. However, under the presence of high consumer trust, the consumer (i.e. with a high level of dispositional privacy concerns regarding unauthorized secondary usage) might perceive the vendor would keep its promises and would not perform other unfavorable actions regarding unauthorized secondary usage of its consumers' information. Although the consumer generally has a high level of dispositional privacy concerns regarding unauthorized secondary usage of information, this high level of trust in the vendor would induce the consumer to have a relatively lower level of specific privacy concerns regarding the vendor's information privacy practices in unauthorized secondary usage, as compared to the instance under the presence of low

trust. Hence, consumer trust might be able to weaken the relationship between a consumer's dispositional privacy concerns and his/her specific privacy concerns regarding an online vendor's information privacy practices.

H5: The relationship between a consumer's dispositional privacy concerns and his/her specific privacy concerns regarding an online vendor's information privacy practices would be weaker under conditions of high consumer trust than low consumer trust.

3.5 Pilot Study

With the development of the new research model for this study, a pilot study was carried out using the survey data from a previous study, which was administered to a group of 331 undergraduate students taking an e-commerce course in National University of Singapore (Xu et al., 2003). The aims of the pilot study include that of exploring, understanding, and verifying all the possible roles (especially the moderation effects) that trust has in the process of determining consumers' disclosure intentions. Furthermore, the pilot study allows for the applicability of the present model to be tested using several similar constructs found in the previous study (e.g. reward preferences, dispositional privacy concerns, trust, and disclosure intention). However, it is important to note that this pilot study would only serve as a guide to better understand the concepts involved, and would not directly prove the significance and validity of the present study's hypotheses.

The reliability and validity of the measuring instruments were validated to show adequacy² (Xu et al., 2003). Using SPSS 12.0, regression analyses were carried out to better understand the roles that trust, and other factors (e.g. reward preferences and dispositional privacy concerns) have in affecting consumers' disclosure intention². The findings from the pilot study have revealed several

² For more detailed information and results, refer to the paper by Xu et al. (2003).

interesting insights. It has been found that if consumers have high preferences for the rewards offered by the online vendors, they would be more willing to disclose their information with the provision of such rewards³. Furthermore, the results have revealed that consumers with high disposition privacy concerns would be more willing to disclose their personal information if the vendors were to provide measures that would alleviate their privacy concerns³. In addition, the pilot study has demonstrated that with the presence of trust in the vendors, consumers would be more willing to disclose their personal information to them³.

The results from the pilot study have further demonstrated that besides having direct main effects on disclosure intentions, consumer trust also exhibits certain moderation effects³. In particular, the results have revealed that the presence of consumer trust tended to suppress the relationship between consumers' reward preferences and their disclosure intentions when the preferred rewards were given.³ Moreover, it has been found that consumer trust tends to weaken the relationship between consumers' dispositional privacy concerns and their disclosure intentions when the specific privacy concerns were alleviated³.

The findings from the pilot study have indeed offered numerous valuable insights to the roles and working mechanisms of trust, rewards, and privacy concerns in determining consumers' disclosure tendency. In particular, the pilot study has demonstrated that consumer trust plays relevant and important roles in influencing consumers' disclosure intention. Besides having a direct main effect on consumers' disclosure intention, the pilot study has also confirmed that consumer trust indeed takes on moderation roles in the disclosure process. Taking these valuable insights into consideration, it is thus necessary to conduct a second study to further explore and understand the moderation roles of consumer trust that might be present in the relationships between dispositional and situational factors. By failing to consider the situational factors, the pilot study could not fully

³ For more detailed results, refer to the paper by Xu et al. (2003).

comprehend the overall working mechanisms of the situational/environment elements (e.g. consumer trust, perceived reward values, and specific privacy concerns) in determining consumers' disclosure tendency, and could only have a limited understanding of the roles and importance of the consumers' personality in determining their disclosure tendency. Hence, by considering both dispositional (e.g. personality) and situational (e.g. consumer trust, perceived reward values, and specific privacy concerns) factors, the second study seeks to complete the whole picture of interplays between them, and fully explains the phenomenon of consumers' willingness to disclose to the online vendors. Furthermore, with the discovery of faults in the previous instruments (e.g. failure to examine the effects of rewards and privacy concerns together) and other useful insights from the pilot study, valuable aids are offered in the revision of various constructs' measuring instruments, and allows the present research model to be validated with better reliability and accuracy (as discussed in **Section 4**).

4 Methodology

The sample survey research strategy has been employed for data collection in this exploratory study. Advantages of using the survey research methodology include having more accurate results due to the substantially large sample size that facilitate a lower sampling error, and having the ability to minimize the problem of sample bias using the random sampling procedures. Furthermore as this is an exploratory study, survey research methodology is best suited as it often yields data that could suggest new and unexplored hypotheses (Stone, 1978). With insights from the pilot study (see **Section 3.5**), scales were developed, adapted or modified to measure the seven types of reward preferences, four types of dispositional privacy concerns, consumer trust, seven types of perceived reward value, four types of specific privacy concerns, and disclosure intention. These scales were then consolidated into an instrument and administered to a pool of subjects. This section provides details of both scale development and data collection processes.

4.1 Survey Design

The research model of this study would be validated using the survey methodology. In particular, the survey is designed in such a way that the rewards (i.e. H1, and H4) and costs (i.e. H2, and H5) components of the research model will be validated separately. In a bid to better understand the specific roles of each of the rewards and privacy concerns, the hypotheses in this research study would be validated using first-ordered constructs. Hence, second-ordered constructs, such as reward preferences, dispositional privacy concerns, perceived reward values, and specific privacy concerns, would be measured using their first-ordered constructs in the survey. In particular, the reward preferences and perceived reward values constructs are measured by their first-ordered constructs, which include preference and perceived values of monetary savings, time savings, self-concept enhancement, social adjustment, pleasure, novelty, and altruism. The dispositional privacy

concerns and the specific privacy concerns constructs are measured by their first-ordered constructs, which include concerns about improper collection, errors, unauthorized secondary usage, and improper access.

Given that some of the second-ordered constructs (e.g. trust, perceived reward values, specific privacy concerns, and disclosure intention) are situational-based, the survey is designed to include scenarios, where subjects would be made to make assumptions about the situations they are in, before filling in the respective sections of the questionnaires. For the survey scenarios, the banking sector has been chosen since most of the subjects (i.e. postgraduates from NUS, School of Computing) would be familiar and has experiences with the online banking services it provides. Overall, there are two versions of the survey questionnaires. One version would consist scenarios that are set using the website of DBS bank, a well-known bank with branches in Asian region like that of Singapore, and Hong Kong, offering numerous banking and other financial services. In the other version, the scenarios are set using the website of the Bank of Nigeria, a lesser-known bank in Singapore. Unlike DBS bank, it does not have much operation in both Singapore and the Asian region.

At the beginning, the survey questionnaire sets the scenario that the subject is interested in opening a saving account with a bank over the Internet, and is browsing through a bank's website (i.e. either DBS bank or the Bank of Nigeria, depending on the version of the survey questionnaire), which require him/her to register with the bank before applying for the saving account. Following this, the instruments of trust are administered to assess the subjects' overall level of trust in the respective bank (i.e. either DBS or the Bank of Nigeria, depending on the scenario). Under the same scenario, the instruments of specific privacy concerns, and perceived reward values are administered to the subjects. The specific privacy concerns construct is assessed through its first-ordered constructs (i.e. improper collections, errors, unauthorized secondary usage,

and improper access), and operationalized through questions asking subjects about their level of uncomfortable if no information is provided regarding specific examples of each of the four kinds of privacy concerns (i.e. improper collections, errors, unauthorized secondary usage, and improper access). Using first-ordered constructs, the perceived reward values construct is operationalized through questions asking subjects for their perceived level of reward values if they are given an option to receive specific examples of each of the seven kinds of rewards (i.e. monetary savings, time savings, self-enhancement concept, social adjustment, pleasure, novelty, and altruism).

In the next section, the subjects are reminded that the word “website” referred in this section generally refer to any websites and not just the respective bank’s website. Following this, the instruments of reward preferences and dispositional privacy concerns are administered. The first-ordered constructs of the reward preferences and dispositional privacy concerns are operationalized in the survey through questions asking subjects about their preferences and concerns with regards to the respective 7 different kinds of rewards, and 4 types of privacy concerns.

In an attempt to measure the disclosure intentions, subjects are made to assume that they are in the scenario where they have browsed through the respective bank’s website. They are then asked to indicate the extent that they would be interested to disclose their information to the website in order to open a saving account. Since the research model is to be validated through two separate parts, i.e. rewards and costs, the disclosure intentions construct is operationalized through two sets of questions. Firstly, the subjects’ disclosure intention are assessed by a base-case question, which measures their intention to disclosure when the bank promised that there is no misuse of information and offer no rewards in return. Building on this base-case question, a set of questions try to assess the subjects’ disclosure intention when the conditions in the base-case question holds except that they are provided with an option to receive each of the 7 kinds of rewards. Besides this,

another set of questions also try to assess the subjects' disclosure intention when the conditions in the base-case question holds except that they are faced with the face that there is no information with regards to each of the 4 types of privacy concerns (i.e. the subjects are subjected to the situation where they might incur privacy costs). In an attempt to validate the research model as a whole, a last question is included in the disclosure intention's instrument to measure the subjects' intention to disclose when the conditions of the base-case question holds and that they are now provided with an option to receive a particular type of rewards, and face the uncertainty of incurring the costs of a particular privacy issue.

4.2 Scale Development

To measure the seven types of reward preferences, questions were adapted from an instrument presented in Tam et al. (2002). This instrument consists of a total of 26 questions to access an individual's preference for monetary savings, time savings, self-concept enhancement, social adjustment, pleasure, novelty and altruism. All the questions were anchored on seven-point Likert scales, ranging from strongly disagree (1) to strongly agree (7).

Questions to measure an individual's dispositional privacy concerns were adapted and modified from an instrument that Smith et al. (1996) developed and validated. This instrument consists of a total of 15 questions to assess the four dimensions of an individual's dispositional privacy concern; namely excessive collection of, errors in, unauthorized secondary use of and improper access to stored personal information. To better assess an individual's dispositional privacy concerns in the present study's context of e-commerce and to be consistent to the questions measuring reward preferences; all the questions in the original privacy concern's instrument were modified to reflect one's dispositional privacy concerns in the e-commerce context. For example, in the case of excess collection of personal information, an original question asking about

consumer's concern when "companies ask him/her for too much personal information" has been reworded to asking about the consumer's concern when "websites ask him/her for too much personal information".

To measure the level of consumer's trust in a website, an instrument by Doney and Cannon (1997) was adapted and modified to suit the present study in an e-commerce context. In the original instrument, Doney and Cannon (1997) constructed the 8 items instrument to measure the extent to which a consumer believes in and trusts a supplier to perform its obligations effectively and reliably in the customer's best interests. However, in the present study, all the questions were modified to reflect one's trust in a particular website, and anchored on seven-point Likert scales. To facilitate hypothesis testing in the study, variations in the level of consumer trust were created through the use of two scenarios, which were randomly assigned to the subjects. In one of the scenarios, the website that solicits consumer's personal information is that of DBS bank, a well-known bank with branches in Asian region like that of Singapore, and Hong Kong, offering numerous banking and other financial services. In the other scenario, the website used was that of the Bank of Nigeria, a lesser known bank in Singapore. Unlike DBS bank, it does not have much operation in both Singapore and the Asian region. Hence, it has been predicted that the subjects should have a higher level of consumer trust in DBS bank as compared to that of Bank of Nigeria. In both scenarios, respondents were made to assume that they were interested in opening a saving account over the Internet, and were browsing through the Internet when they came across the website of the respective bank, which tried to solicit personal information from them.

To assess the situational-based perceived reward value, self-generated questions were used to measure the consumer's perceived value of the offered benefit, which is provided as an option by the bank in the respective scenario. The scenario, in which the construct reward value is based on, is the same as that of the consumer trust. To reduce ambiguity, the rewards in the questions were

specified in details using specific examples. For example in the case of monetary saving, the reward is a 30 dollar voucher which the consumer could use to purchase something that he/she wanted from his/her favorite store (e.g. Isetan, Best Denki, Harvey Norman, Carrefour, etc.). The reward value instrument consists of a total of seven questions to assess the consumer's perceived value for the given benefit, which includes monetary savings, time savings, self-concept, social adjustment, pleasure, novelty and altruism. All questions were anchored on seven-point Likert scales.

The situational-based specific privacy concerns construct was also being assessed using self-generated questions, which were used to measure the consumer's specific privacy concerns in the bank of the respective scenario (which is the same scenario as that of consumer trust and reward value). Four questions were generated, and anchored on seven-point Likert scales to measure the specific privacy concerns, which consists of four dimensions (i.e. improper collection, error, unauthorized secondary usage, and improper access). To be consistent, the questions that made up the privacy concerns instrument were created in the same nature as that of the questions in the reward value instrument, and had specific examples in each questions to reduce ambiguity. For instance, in the case of unauthorized secondary usage, the concern was represented by the specific example that other organizations (e.g. insurance companies, real estates agents, travel agents, etc.) might access the consumer's information without his/her authorization.

To measure the dependent variable disclosure tendency, self-generated questions were used, and the respondents were made to assume that they were in a scenario where they had browsed through the website of the respective bank (either DBS bank or Bank of Nigeria)⁴. These questions were designed to measure the consumer intention to provide personal information to the website in the

⁴ Note that the bank in the scenario (either DBS bank or Bank of Nigeria) is held constant throughout the whole questionnaire.

respective scenario. There was a baseline question in the instrument, which was used to assess the consumer's disclosure intention in the absence of any rewards, and specific privacy concerns. Seven other questions in the instrument were used to assess the consumer's disclosure intention due solely to the provision of each of the seven types of reward. Furthermore, another four questions were used to measure the consumer's disclosure intention in the presence of each of the four types of privacy concerns. In the instrument, there is another question set to measure the disclosure intention due to the presence of both reward and privacy concern. This is to be consistent with the Social Exchange Theory, which posited that one's behavior is an outcome of both the reward and cost that are present in the course of action. As there is a total of seven types of rewards and four types of privacy concern, a total of 28 questions were devised, where each question would measure the disclosure intention due to the presence of one type of reward and one type of privacy concern. However, due to the high cost of including all 28 questions in each of the questionnaires, only 1 out of 28 of the questions was included in each questionnaire. Again, to reduce ambiguity, specific examples were used in the disclosure intention's questions. In addition to that, each question in the disclosure intention instrument was also specified to remind the respondent that he/she needed not take into consideration other issues that were not in the question. That's to say the respondent only needed to indicate his/her disclosure intention pertaining to the given scenario in each of the question. For example, in the case of disclosure intention with the provision of monetary saving, the respondent only needed to take into consideration the monetary saving involved and ignore other issues like unauthorized secondary usage of or the error in the disclosed information.

4.3 Data Collection

Each survey questionnaire consists of 73 questions (refer to **Appendix C**), and the survey was administered to 168 postgraduates in the School of Computing (National University of Singapore). Majority of the postgraduates in School of Computing would have some form of working experience in IT environment, and should be familiar with both the technical and managerial aspects of e-commerce (including the issues regarding the disclosure of information over the Internet). Furthermore, it has been found that e-commerce consumers are generally younger and more highly educated than conventional consumers (OECD, 1998). Thus, using the postgraduates from School of Computing as subjects for the survey should be a reasonable representation for the e-commerce consumer population.

The research model of the study and the purpose of the research were not divulged to the subjects before the administration of the survey. The participation for the survey is voluntary with a token of payment (i.e. S\$20) given to the respondent for a completed questionnaire. 56⁵ versions of the survey questionnaire were randomly distributed to the 168 subjects, and in total 168 usable responses were collected back, with 84 responses for DBS bank, and 84 responses for Bank of Nigeria (i.e. six sets of the 28 cross reward-privacy questions). Among the 168 respondents, 54.2% of them are male, with the majority of them with age ranging from 26-33. From the demographics details gathered, 95.8% of the subjects have some form of working experience, and that most of them have extensive Internet experience - with 85.1% of them spending more than 10 hours per week to use and surf the Internet.

⁵ There are 56 versions of the questionnaire, 28 (reward-privacy cross disclosure intention) * 2 (DBS or Bank of Nigeria)

5 Analyses and Results

Using data collected from the survey that was administered to 168 postgraduate subjects, measurement properties of each instrument were assessed to ensure their reliability and validity. After ensuring the reliability and validity of the measurement model, hypotheses testing were then carried out. This section provides details of the statistical tests that were carried out to assess the measurement properties of the instrument and hypotheses. All statistical tests were carried out at a 5% level of significance.

5.1 Measurement Model

The measurement properties of all the questions in the multi-items instruments such as the reward preference instrument, dispositional privacy concern instrument, and consumer trust instrument were first assessed. As “reliability is a necessary but not sufficient condition to assure validity” (Stone, 1978), each set of measures of the respective construct was first assessed for their reliability (i.e. to ensure that the constructs’ measures are error free). To check for reliability, Cronbach’s alphas⁶ of the respective instrument were calculated. A construct is say to have adequate reliability if the Cronbach’s alpha computed from its set of measures is at least 0.7 (Nunally, 1978).

⁶ Cronbach’s alpha is a generalized measure of internal consistency of a multi-item scale

Table 5.1 – Reliability Indices

Construct	Cronbach's Alpha
Monetary Savings (MS)	0.957
Time Savings (TS)	0.818
Self-Concept (SC)	0.877
Social Adjustment (SA)	0.794
Pleasure (PL)	0.869
Novelty (NV)	0.907
Altruism (AL)	0.912
Improper Collection (IC)	0.796
Errors in Storing (ES)	0.832
Unauthorized Secondary Use (US)	0.849
Improper Access (IA)	0.857
Consumer Trust (CT)	0.958

As shown in the results in **Table 5.1**, all the seven constructs of reward preferences (i.e. monetary savings, time savings, self-concept, social adjustment, pleasure, novelty, and altruism) had adequate reliability, with the Cronbach's alphas above the recommended threshold of 0.7. The results in **Table 5.1** have also reflected the adequacy of the reliability in the consumer trust instrument and the four constructs of dispositional privacy concern (i.e. improper collection, errors in storing, unauthorized secondary use, and improper access), with all the Cronbach's alphas above the recommended threshold of 0.7. Besides Cronbach's alpha, statistics such as composite reliability and average variance extract (AVE) could also be used as a measure for reliability. Composite reliability is the average correlation between items and factor, while average variance extracted (AVE) is a measure of the amount of variance captured by the construct in relation to the amount of variance attributed to measurement error. Although both composite reliability and average variance extracted (AVE) are measures for reliability, they could also be used to demonstrate convergent validity, as shown subsequently in the section on convergent validity.

After assessing the constructs for their reliability, separate confirmatory factor analyses (CFA) were carried out to examine the measures-construct relationships in each instrument (see **Table 5.2, 5.3, and 5.4**). The CFA model addresses construct validity and make fewer assumptions and provide more diagnostic information about the construct's reliability and validity, as compared to the multitrait-multimethod matrix (MTMM). Unlike CFA, MTMM procedure also does not provide explicit tests of the whole model, estimates of the parameters, and fit measures (Bagozzi and Philips, 1991). Thus, CFA is performed in this study using LISREL 8.54. Furthermore, as “reliability is a necessary but not sufficient condition to assure validity” (Stone, 1978), construct validity⁷ of each measure in the respective construct is assessed with the performance of CFA. In particular, to show the construct validity of a measure, two forms of validity were examined; namely the convergent⁸ and discriminant⁹ validity.

Discriminant validity is “the extent to which strong correlations are absent between a given measure and measures of other constructs from which it is assumed to differ” (Campbell and Fiske, 1959). To assess the discriminant validity of the measures, constructs-pairwise constrained chi-square tests were carried out (Anderson and Gerbing, 1988; McKnight et al., 2002^b). Using LISREL 8.54, two constructs were first loaded with their original intended measures (i.e. unconstrained model), and the model's chi-square value and degree of freedom were noted. Subsequently, the covariance of the two constructs was then fixed to have a value of 1.00 (i.e. constrained model). The effect of fixing the covariance between the two constructs is same as that of loading the original intended measures of both the constructs onto only one construct. Hence, the measures of a particular construct are shown to be uncorrelated to the measures of the other construct if the chi-square of the unconstrained model is significantly smaller than that of the

⁷ Construct validity of a measure is established by showing that “it is an appropriate operational definition of the construct it purports to measure” (Stone, 1978).

⁸ Convergent validity is “the extent to which scores on the measure correlates with scores on other independent measures of the variable” (Campbell and Fiske, 1959).

⁹ Discriminant validity is “the extent to which strong correlations are absent between a given measure and measures of other variables from which it is assumed to differ” (Campbell and Fiske, 1959).

constrained model (i.e. the unconstrained model is a better fitted model). Using LISREL 8.54, all combinations of constructs-pairwise constrained chi-square test were performed at 5% significant level (see **Appendix D**). As shown in **Appendix D**, all the chi-square differences between the unconstrained and constrained models were significant at 5% level, with values all above the recommended threshold of 5. Hence, adequate discriminant validity was achieved by the intended measures of each constructs, i.e. they were not strongly correlated to measures of other unintended constructs.

Besides discriminant validity, it is also important to assess the convergent validity of measures, to ensure that “a measure correlates with scores on other independent measures of the intended construct” (Campbell and Fiske, 1959). To assess the convergent validity, the composite reliability¹⁰, and the average variance extracted (AVE)¹¹ were computed for each set of measures associated with the respective construct (see **Table 5.2, 5.3, and 5.4**). Adequate convergent validity is achieved if the composite reliability coefficient is at least 0.7 (Fornell and Larcker, 1981), and the average variance extracted (AVE) is at least 0.5 (Bagozzi and Yi, 1989).

From the results in **Table 5.2**, the sets of measures for each respective construct in the reward preference instrument had adequate convergent validity, with their corresponding composite reliability and average variance extracted (AVE) above the recommended threshold of 0.7 and 0.5 respectively. To access the pre-defined measures-construct relationships, the standardized factor loadings were also examined. As shown in **Table 5.2**, all the standardized factor loadings were well above the recommended threshold of 0.5 (Hair et al., 1995). The *t*-statistics of all the standardized factor loadings were substantial and significant at 1% level (with critical value – 2.576). The goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) for the

¹⁰ Composite reliability is the average correlation between items and factor.

¹¹ Average variance extracted (AVE) is a measure of the amount of variance captured by the construct in relation to the amount of variance attributed to measurement error.

measurement model, which consists of 7 constructs and 26 questions, was 0.798 and 0.744 respectively. Both the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) were at a marginally acceptable level as compared to the recommended range of above 0.90 and 0.80 respectively (Hu and Bentler, 1995). However, as shown in **Table 5.2**, both the root mean square residuals (RMR) and the root mean square error of approximation (RMSEA) for the reward preference measurement model were within the acceptance range of 0.08 or less (Hair et al., 1995), with values of 0.075 and 0.077 respectively. Overall, the reward preference measurement model was found to be adequate¹².

¹² According to an analysis carried out by Boudreau et al. (2001), it found that it is uncommon in LISREL models to have excellent fit values in all indices.

Table 5.2 – Summary of the CFA of Reward Preferences Instrument

Construct and Questions	Standardized Factor Loading	T-value	Composite Reliability of construct	Average Variance Extracted (AVE)
Monetary Savings (MS)			0.956	0.846
MS1	0.888	14.597		
MS2	0.909	15.208		
MS3	0.944	16.255		
MS4	0.937	16.041		
Time/Effort Savings (TS)			0.835	0.632
TS1	0.672	9.257		
TS2	0.910	13.659		
TS3	0.785	11.246		
Self-concept (SC)			0.879	0.708
SC1	0.780	11.593		
SC2	0.883	13.944		
SC3	0.858	13.355		
Social Adjustment (SA)			0.795	0.565
SA1	0.794	11.755		
SA2	0.803	11.960		
SA3	0.649	8.962		
Pleasure (PL)			0.871	0.694
PL1	0.774	11.441		
PL2	0.879	13.815		
PL3	0.842	12.945		
Novelty (NV)			0.910	0.670
NV1	0.702	10.161		
NV2	0.779	11.759		
NV3	0.881	14.218		
NV4	0.847	13.347		
NV5	0.869	13.920		
Altruism (AL)			0.915	0.685
AL1	0.692	9.979		
AL2	0.797	12.177		
AL3	0.894	14.613		
AL4	0.895	14.615		
AL5	0.842	13.259		
Chi-square	550.80			
NCNFI	0.956			
GFI	0.798			
AGFI	0.744			
RMR	0.075			
RMSEA	0.077			

Results in **Table 5.3** have shown that the measures of each construct in the dispositional privacy concern instrument had adequate convergent validity, with their corresponding composite reliability and average variance extracted (AVE) above the respective recommended threshold. Furthermore, all the standardized factor loadings for the measures of the four dispositional privacy constructs were greater than the recommended threshold of 0.50 (Hair et al., 1995). Furthermore, the *t*-statistics for all the standardized factor loadings were substantial and significant at 1% level (with critical value – 2.576). However, the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) for the dispositional privacy concerns measurement model were only marginally accepted, with values of 0.736 and 0.622 respectively. As displayed in **Table 5.3**, the root mean square residuals (RMR) of the dispositional privacy concern measurement is 0.061, which was within the acceptable range of less than 0.08 (Hair et al., 1995). However, the root-mean square error of approximation (RMSEA) for this measurement model was 0.161, greater than the recommended range of less than 0.08 (Hair et al., 1995). Overall, this measurement model was also found to be adequate¹³.

¹³ According to an analysis carried out by Boudreau et al. (2001), it found that it is uncommon in LISREL models to have excellent fit values in all indices

Table 5.3 – Summary of the CFA of Dispositional Privacy Concerns Instrument

Construct and Questions	Standardized Factor Loading	T-value	Composite Reliability of construct	Average Variance Extracted (AVE)
Improper Collection (IC)			0.805	0.510
IC1	0.615	8.203		
IC2	0.788	11.341		
IC3	0.787	11.314		
IC4	0.650	8.778		
Error (ES)			0.840	0.570
ES1	0.630	8.525		
ES2	0.812	11.991		
ES3	0.753	10.776		
ES4	0.810	11.936		
Unauthorized Usage (US)			0.862	0.615
US1	0.867	13.809		
US2	0.638	8.945		
US3	0.685	9.817		
US4	0.913	15.020		
Improper Access (IA)			0.862	0.676
IA1	0.796	12.003		
IA2	0.790	11.867		
IA3	0.877	13.909		
Chi-square	449.87			
NCNFI	0.908			
GFI	0.736			
AGFI	0.622			
RMR	0.061			
RMSEA	0.161			

Table 5.4 – Summary of the CFA of Consumer Trust Instrument

Construct and Questions	Standardized Factor Loading	T-value	Composite Reliability of construct	Average Variance Extracted (AVE)
Consumer Trust (CT)			0.960	0.749
CT1	0.900	14.965		
CT2	0.903	15.068		
CT3	0.906	15.130		
CT4	0.867	14.079		
CT5	0.844	13.469		
CT6	0.900	14.966		
CT7	0.915	15.415		
CT8	0.661	9.541		
Chi-square	87.64			
NCNFI	0.975			
GFI	0.884			
AGFI	0.791			
RMR	0.030			
RMSEA	0.142			

With reference to **Table 5.4**, measures in the consumer trust instrument showed adequate convergent validity, with their corresponding composite reliability and average variance extracted (AVE) above the respective recommended threshold. In addition, standardized factor loadings of the measures associated with the consumer trust construct, were all way-above the recommended threshold of 0.5 (Hair et al., 1995), with the exception of the last measure (i.e. CT8), which has a relatively smaller standardized factor loading of 0.661. The *t*-statistics of all the factor loadings were also substantial and significant at 1% level. The goodness-of-fit index (GFI) and the adjusted goodness-of-fit index of the consumer trust measurement model had values of 0.884 and 0.791 respectively. Both the goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) were closed to the recommended threshold of 0.90 and 0.80 respectively (Hu and Bentler, 1995). From **Table 5.4**, the root mean square residual (RMR) of the consumer was also in the acceptable range of below 0.08 (Hair et al., 1995). However, the root mean square error of approximation

(RMSEA) of this measurement model was only marginally accepted. Overall, the consumer trust measurement model was also found to be adequate¹⁴.

5.2 Hypotheses Testing

After ensuring that all the measurement models had adequate reliability and validity, the measure for each construct was computed by taking the average of all its intended measures. For example, the measure of the construct, monetary saving in the reward preference instrument, was computed by taking the average of its four intended measures (i.e. MS1, MS2, MS3, and MS4). However, due to the design of the survey questionnaires, which consisted of two main scenarios (i.e. DBS bank and Bank of Nigeria), *t*-tests were first carried out on the respondents' demographics information and levels of consumer trust, at 5% significant level. This was done to ensure that the two samples were unbiased and that the levels of consumer trust in them were different as predicted (i.e. high for DBS bank and low for Bank of Nigeria). The *t*-tests were performed using SPSS 12.0, with bank as the grouping variable (i.e. DBS bank had a value of 1, while Bank of Nigeria had a value of 0).

¹⁴ According to an analysis carried out by Boudreau et al. (2001), it found that it is uncommon in LISREL models to have excellent fit values in all indices.

Table 5.5 – Results T-Tests

Element	Bank	Mean	Std. Deviation	T-Value	Sig. (2-tailed)
Consumer Trust	1 0	4.780 3.400	1.009 1.408	7.317	0.000
Age	1 0	27.88 28.31	4.532 5.484	-0.552	0.582
Sex	1 0	0.600 0.490	0.494 0.503	1.393	0.165
Internet Usage	1 0	30.60 26.27	24.011 17.895	1.323	0.188
Disclosure	1 0	0.890 0.950	0.311 0.214	-1.444	0.151
Disclosed Amount	1 0	6.800 5.560	9.518 7.675	0.928	0.355
Working Experience	1 0	4.730 4.990	4.320 5.562	-0.336	0.737

As shown by the results in **Table 5.5**, the two samples were unbiased as the *t*-tests on the means of the respondents' demographics such as age, sex, amount of Internet usage time, whether they perform the behavior of disclosure before, amount of websites they disclosed before, and working experience, were proved to be insignificant. Furthermore, as posited previously, it was found that there is a significant difference in the level of consumer trust in the two samples. In particular, it was revealed that the subjects had a higher level of trust in DBS bank than in Bank of Nigeria, as shown by the means in the level of consumer trust related to the two banks (see **Table 5.5**).

Following this, multiple regression analyses were carried out using SPSS 12.0, to test for the correctness of the hypotheses at 10% significance level (i.e. significant if $p\text{-value} \leq 0.1$). For each hypothesis that involved either rewards or privacy concerns, separate multiple regression analysis was performed for each of the respective seven types of reward or four types of privacy concerns. For the results of the regression analyses, statistics that would be reported include the regression model's R^2 value, Variance Inflation Factor (VIF), Conditional Index (CI), unstandardized

coefficient of each independent variable in the estimated regression model, and their respective significance (p-value).

Firstly to test **H1**, the posited direct relationships between consumers' perceived values of the rewards offered (RV) and their disclosure intentions (DI) were explored using regression equations of the form $DI = RV + c$, where c is the constant (See **Table 5.6**). The independent variable, RV, was measured by a question that asked the subjects for their perceived values when a specific reward was offered as an option by the online vendor in the respective survey scenario. On the other hand, the dependent variable, DI, was measured by a question that asked subjects for their willingness to disclose when there was no misuse of their personal information, and that the vendor provided nothing in return except for the particular reward. Taking monetary saving (MS) as an example; the relationship between consumer's perceived value of the monetary savings that was offered as an option by an online vendor (SMS), and his/her disclosure intention with the provision of such monetary savings by the vendor (DMS), was modeled as $DMS = SMS + c$, whereby c is the constant.

Results in **Table 5.6** revealed that all the regression coefficients of the independent variables (i.e. predictors) in the regression models were positive (as posited in **H1**) and significant, with all the p-value (Sig.) close to 0.000. Hence, the results showed that if consumers perceived a high value for the rewards that were offered as an option by the online vendors, their disclosure tendency would increase when such rewards were offered in return. However, if the consumers perceived a low value for the rewards that were offered as an option by the vendors, it would lower their disclosure tendency when such rewards were provided. Hence, **H1** was supported.

Table 5.6 – Results of Regression Models in the form – $DI = RV + c$

Regression Model	Predictors	Unstandardized Coefficient		Sig.	R ²	VIF	Condition Index
		B	Std. Error				
DMS=SMS	SMS	0.581	0.074	0.000	0.270	1.000	6.914
DTS=STS	STS	0.532	0.056	0.000	0.352	1.000	6.818
DSC=SSC	SSC	0.526	0.064	0.000	0.292	1.000	7.119
DSA=SSA	SSA	0.493	0.066	0.000	0.251	1.000	6.499
DPL=SPL	SPL	0.592	0.061	0.000	0.362	1.000	5.362
DNV=SNV	SNV	0.536	0.060	0.000	0.328	1.000	4.995
DAL=SAL	SAL	0.426	0.067	0.000	0.194	1.000	5.894

*Constants are not reported for brevity

Legend: MS – Monetary Savings; TS – Time Savings; SC – Self-Concept enhancement; SA – Social Adjustment; PL – Pleasure; NV – Novelty; AL – Altruism; D – Disclosure Intention; S – Perceived Value of the respective reward (e.g. SMS – Perceived Value of the given Monetary Savings)

Next, to test **H2**, the relationships between consumers' specific privacy concerns (SPC) regarding the vendor's information privacy practices and their disclosure intention (DI) were explored using regression models of the form, $DI = SPC + c$, where c is the constant (see **Table 5.7**). As with the measures for perceived reward values, the independent variable (SPC) was measured by a question asking for the subject's level of privacy concerns when the online vendor in the respective scenario did not provide any information regarding the particular privacy concern that the question was measuring (i.e. there is a possibility that the vendor might breach the specific privacy issue as mentioned in the question). The dependent variable (DI) was also measured by a question asking for the subject's willingness to disclose his/her personal information when the respective vendor in the scenario did not offer anything in return, and that there were no other forms of information misuse except for the specific privacy concern regarding a specific privacy issue presented in the question. Taking the privacy issue of improper collection as an example; the relationship between a consumer's specific privacy concern in the vendor's information privacy practices regarding

improper collection of information (SIC), and his/her disclosure intention when only this privacy concern was present with nothing else offered (DIC), was modeled as $DIC = SIC + c$.

Table 5.7 – Results of Regression Models in the form – $DI = SPC + c$

Regression Model	Predictors	Unstandardized Coefficient		Sig.	R ²	VIF	Condition Index
		B	Std. Error				
DIC=SIC	SIC	-0.166	0.087	0.058	0.022	1.000	7.270
DES=SES	SES	-0.130	0.088	0.144	0.013	1.000	8.137
DUS=SUS	SUS	-0.076	0.106	0.478	0.003	1.000	8.721
DIA=SIA	SIA	-0.219	0.112	0.052	0.023	1.000	9.120

*Constants are not reported for brevity

Legend: IC – Improper Collection; ES – Error in Storing; US – Unauthorized Secondary Usage; IA – Improper Collection; D – Disclosure Intention; S – Specific Privacy Concern (e.g. SIC – Specific Privacy Concern in the vendor’s information privacy practices regarding improper collection of personal information)

From the results shown in **Table 5.7**, the coefficients of all the independent variables (predictors) were negative, and significant with low p-values (except for specific privacy concerns in errors in storage, and unauthorized secondary usage of information). It was revealed that when consumers had a high level of concerns in a particular privacy issue regarding the vendor’s information privacy practices (e.g. improper access), they would be less likely to disclose his/her information to the vendor when such privacy concern existed. On the other hand, if consumers had a low level of concerns in a particular privacy issue regarding the vendor’s information privacy practices, they would be more willing to disclose. Hence, **H2** was partially supported (with the exception of errors in storage and unauthorized secondary usage).

The Social Exchange Theory and Theory of Response Behavior posited that the consumers’ intentions to disclose (DI) would be determined jointly by both perceived reward values (RV) and specific privacy concerns (SPC) in the form $DI = RV - SPC + c$, where c is the constant. To explore the influence that both the consumers’ perceived reward values and specific privacy

concerns had in their disclosure intentions, the regression model, $DI = (SMS + STS + SSC + SSA + SPL + SNV + SAL) - (SIC + SES + SES + SIA)$, was tested, with its results presented in **Table 5.8**. The independent variables were measured by the questions used to compute the results in **Table 5.6** and **Table 5.7**. However, the dependent variable (DI) was measured by multiple questions. Each question consisted of a scenario where one of the seven types of rewards (e.g. monetary savings) was given under the presence of one of the four types of specific privacy concerns (e.g. improper access). In total, there were 28 questions measuring the dependent variable, disclosure intention. As each question only measured disclosure intention due to one type of reward and one type of specific privacy concerns, other independent variables in the regression model would be set to have a value of 0. This is feasible as the disclosure intention would be influenced by the specific reward and the particular privacy issue as posited in the scenario of the question, and would only be affected by the respective perceived value of the offered reward and specific privacy concern regarding the particular privacy issue (i.e. without the presence of other rewards/privacy issues, the respective perceived values/specific privacy concerns might not be affecting the disclosure intention in each case, and hence might have values close to 0).

Table 5.8 – Results of Regression Model of the form $DI = RV - SPC + c$

Model	Predictor	Unstandardized Coefficient		Sig.	R ²	VIF	Condition Index
		B	Std. Error				
DI=SMS+STS+SSC+SSA+SPL+SNV+SAL+SIC+SES+SUS+SIA	SIC	-0.174	0.112	0.122	0.102	4.345	11.432
	SES	-0.172	0.115	0.139		4.329	
	SUS	-0.126	0.102	0.217		4.376	
	SIA	-0.174	0.101	0.086		4.401	
	SMS	0.217	0.095	0.023		1.945	
	STS	0.223	0.091	0.015		1.962	
	SSC	0.132	0.100	0.188		1.976	
	SSA	0.268	0.099	0.008		1.942	
	SPL	0.253	0.122	0.039		1.882	
	SNV	0.389	0.113	0.001		1.870	
	SAL	0.203	0.113	0.074		1.895	

*Constants are not reported for brevity

Legend: MS – Monetary Savings; TS – Time Savings; SC – Self-Concept enhancement; SA – Social Adjustment; PL – Pleasure; NV – Novelty; AL – Altruism; IC – Improper Collection; ES – Error in Storing; US – Unauthorized Secondary Usage; IA – Improper Collection; D – Disclosure Intention; S – Perceived Value of the respective reward (e.g. SMS – Perceived Value of the given Monetary Savings) or Specific Privacy Concern (e.g. SIC – Specific Privacy Concern in the vendor's information privacy practices regarding improper collection of personal information)

Table 5.8 showed the results of the multiple regression analysis of the form $DI = RV - SPC + c$. The Variance Inflation Factors (VIF) and the Condition Index (CI) showed no collinearity problem as they were all well below the recommended threshold of 10 and 30 respectively. In line with what **H1** posited, all the regression coefficients of the perceived rewards values were positive and significant, except for the perceived value of self-concept. **H2** was partially supported by the results in **Table 5.8**, as only the regression coefficient of the specific privacy concerns in a vendor's information privacy practices regarding improper access was negative and significant, whereas the specific privacy concerns in regarding improper collection, errors in storage, and unauthorized secondary usage were insignificant. It was also revealed in the results (see **Table 5.8**) that a consumer's perceived value of the offered reward played a bigger role than that of his/her specific privacy concerns in determining his/her disclosure intention. Hence, **H1** and **H2** were further substantiated by the results in **Table 5.8**. The consumers' disclosure tendency would

increase when their perceived values of the rewards were high, and had low specific privacy concerns in the vendors' information privacy practices.

To test for **H3**, regression analysis was carried out using model of the form $DB = CT + c$ (see **Table 5.9**), where the independent variable, CT is the consumer trust, and the dependent variable, DB is the base case for disclosure. The base case for disclosure (DB) was measured by a question asking subjects about their willingness to disclose when the vendor did not offer anything in return and that there would be no misuse of their information. As revealed by the results in **Table 5.9**, the coefficient of consumer trust was positive and significant. Hence, **H3** is supported. If consumers had trust in the online vendors and was willing to depend on them, they would be more willing to disclose their personal information to them.

Table 5.9 – Results of Regression Model of the form $DB = CT + c$

Regression Model	Predictors	Unstandardized Coefficient		Sig.	R ²	VIF	Condition Index
		B	Std. Error				
DB = CT	CT	0.414	0.076	0.000	0.151	1.000	6.008

*Constants are not reported for brevity

Legend: CT – Consumer Trust; DB – Disclosure Intention base case

To show that **H1**, **H2**, and **H3** were robust, multiple regression analyses were then conducted to test the three hypotheses together. For each multiple regression model, there were two independent variables, one for the level of perceived reward value/specific privacy concern and the other for the level of consumer trust (see **Table 5.10**). The dependent variables were the same as those used to compute the results in **Table 5.6** and **5.7** previously. For example, the regression equation for monetary savings would be $DMS = MS + CT + c$.

Table 5.10 – Results of Regression Model of the form DMS = SMS + CT + c

Regression Model	Predictors	Unstandardized Coefficient		Sig.	R ²	VIF	Condition Index
		B	Std. Error				
DMS=SMS + CT	CT SMS	0.129 0.526	0.088 0.083	0.144 0.000	0.280	1.257 1.257	8.433
DTS=STS + CT	CT STS	0.060 0.506	0.070 0.064	0.399 0.000	0.355	1.287 1.287	8.343
DSC=SSC + CT	CT SSC	0.184 0.457	0.070 0.068	0.009 0.000	0.321	1.173 1.173	8.668
DSA=SSA + CT	CT SSA	0.132 0.449	0.072 0.070	0.069 0.000	0.266	1.132 1.132	8.075
DPL=SPL + CT	CT SPL	0.107 0.561	0.069 0.064	0.123 0.000	0.371	1.108 1.108	7.445
DNV=SNV + CT	CT SNV	0.175 0.485	0.073 0.062	0.018 0.000	0.350	1.128 1.128	7.317
DAL=SAL + CT	CT SAL	0.130 0.403	0.070 0.068	0.066 0.000	0.211	1.003 1.003	8.081
DIC = SIC + CT	CT SIC	0.420 -0.138	0.081 0.081	0.000 0.092	0.158	1.005 1.005	10.235
DES = SES + CT	CT SES	0.389 -0.084	0.077 0.083	0.000 0.315	0.146	1.012 1.012	11.310
DUS = SUS + CT	CT SUS	0.407 -0.059	0.095 0.101	0.000 0.561	0.103	1.001 1.001	11.550
DIA = SIA + CT	CT SIA	0.340 -0.222	0.101 0.109	0.001 0.042	0.085	1.000 1.000	11.771

*Constants are not reported for brevity

Legend: CT – Consumer Trust; MS – Monetary Savings; TS – Time Savings; SC – Self-Concept enhancement; SA – Social Adjustment; PL – Pleasure; NV – Novelty; AL – Altruism; IC – Improper Collection; ES – Error in Storing; US – Unauthorized Secondary Usage; IA – Improper Collection; D – Disclosure Intention; S – Perceived Value of the respective reward or Specific Privacy Concern

Results in **Table 5.10** showed that there was no collinearity problems as the Variance Inflation Factors (VIF) and Condition Indices (CI) were below their threshold values. Furthermore, the regression coefficients were positive and significant for perceived reward values, and consumer trust (except for the case of monetary savings, time savings, and pleasure). Results in **Table 5.10** have also revealed that the regression coefficients were negative and significant for specific privacy concerns (except for errors in storage and unauthorized secondary usage). Hence, the

results in **Table 5.10** showed support for **H1**, **H2** (except in the case of errors in storage and unauthorized secondary usage), and **H3** (except in the case of monetary savings, time savings, and pleasure). In addition, from the values of coefficients in the results, it was showed that perceived reward value played a bigger role in determining consumers' disclosure intention than consumer trust. On the other hand, in cases with the presence of specific privacy concerns, it was observed that consumer trust in turn would play a bigger role.

As tested previously, the subjects showed a significantly higher trust for DBS bank than that of the Bank of Nigeria. Hence, using a grouping variable, Bank (i.e. DBS bank had a value of 1, while Bank of Nigeria had a value of 0), the moderating effects that consumer trust had on the relationships between reward preferences (RP) and perceived reward values (RV) were tested using equations of the form $RV = ((1-\text{Bank}) * RP) + (\text{Bank} * RP) + c$, where c is the constant. On the other hand, the moderating effects that consumer trust had on the relationships between dispositional privacy concerns (PC) and specific privacy concerns (SPC) were tested using equations of the form $SPC = ((1-\text{Bank}) * PC) + (\text{Bank} * PC) + c$ respectively (see **Table 5.11**), where c is the constant. For example, the regression equation for monetary savings would be $SMS = ((1-\text{Bank}) * MS) + (\text{Bank} * MS) + c$. Using EViews 4.1, Wald tests were also performed on the coefficients of $((1-\text{Bank}) * MS)$ (i.e. representing the sample of Bank of Nigeria) and $(\text{Bank} * MS)$ (i.e. representing the sample of DBS bank). The moderation effects of consumer trust would be substantiated if the coefficients were tested to be significantly different from each other. In particular to demonstrate the moderation effects of consumer trust on the relationships between consumers' reward preferences and their perceived reward values, the coefficient of the DBS bank's predictor (i.e. $\text{Bank} * RP$) should be larger than that of the coefficient of the Bank of Nigeria's predictor (i.e. $(1-\text{Bank}) * RP$). Conversely, the results would demonstrate consumer trust's moderation on the relationships between consumers' dispositional privacy concerns, and

their specific privacy concerns if the coefficient of the DBS bank's predictor (i.e. Bank*PC) is smaller than that of the coefficient of the Bank of Nigeria's predictor (i.e. (1-Bank)*PC).

Table 5.11 – Results of Regression Model of the form

$$\text{SMS} = ((1-\text{Bank}) * \text{MS}) + (\text{Bank} * \text{MS}) + c$$

Model	Element	Unstandardized Coefficient		Sig.	R ²	Wald Test F Stats Prob
		B	Std. Error			
SMS = ((1-Bank)*MS) + (Bank *MS)	(1- Bank)*MS Bank*MS	0.069 0.303	0.079 0.078	0.380 0.000	0.179	0.000
STS = ((1- Bank)*TS) + (Bank *TS)	(1- Bank)*TS Bank *TS	0.249 0.428	0.109 0.105	0.023 0.000	0.169	0.000
SSC = ((1- Bank)*SC) + (Bank *SC)	(1- Bank)*SC Bank *SC	0.192 0.286	0.104 0.095	0.066 0.003	0.064	0.071
SSA = ((1- Bank)*SA) + (Bank *SA)	(1- Bank)*SA Bank *SA	0.0750 0.199	0.114 0.113	0.513 0.079	0.045	0.016
SPL = ((1- Bank)*PL) + (Bank *PL)	(1- Bank)*PL Bank *PL	0.213 0.317	0.106 0.103	0.040 0.002	0.065	0.035
SNV = ((1- Bank)*NV) + (Bank *NV)	(1- Bank)*NV Bank *NV	0.280 0.404	0.117 0.114	0.017 0.001	0.089	0.015
SAL = ((1- Bank)*AL) + (Bank *AL)	(1- Bank)*AL Bank *AL	0.436 0.463	0.118 0.113	0.000 0.000	0.093	0.608
SIC = ((1- Bank)*IC) + (Bank *IC)	(1- Bank)*IC Bank *IC	0.287 0.235	0.125 0.121	0.023 0.055	0.034	0.146
SES = ((1- Bank)*ES) + (Bank *ES)	(1- Bank)*ES Bank *ES	0.399 0.339	0.100 0.102	0.000 0.001	0.096	0.077
SUS = ((1- Bank)*US) + (Bank *US)	(1- Bank)*US Bank *US	0.549 0.562	0.126 0.125	0.000 0.000	0.109	0.668
SIA = ((1- Bank)*IA) + (Bank *IA)	(1- Bank)*IA Bank *IA	0.696 0.698	0.115 0.113	0.000 0.000	0.187	0.919

*Constants are not reported for brevity

Legend: MS – Monetary Savings; TS – Time Savings; SC – Self-Concept enhancement; SA – Social Adjustment; PL – Pleasure; NV – Novelty; AL – Altruism; IC – Improper Collection; ES – Error in Storing; US – Unauthorized Secondary Usage; IA – Improper Collection; S – Perceived Value of the respective reward or Specific Privacy Concern

The results in **Table 5.11** had revealed that consumers' reward preferences had positive and significant relationships on their respective perceived reward values (except for case of monetary savings and social adjustment). Furthermore, it was showed that consumers' dispositional privacy concerns had positive and significant influence in their respective specific privacy concerns in the vendors' information privacy practices. To substantiate the moderation effects of consumer trust, the F-statistic probabilities from the Wald tests were inspected. The results showed that consumer trust indeed had moderation effects on the relationships between consumers' reward preferences and their respective perceived reward value (except for the case in altruism) (see **Table 5.11**). Under the presence of high consumer trust, the relationship between consumers' preferences for offered rewards and their perceived values of the offered rewards would be stronger. In contrast, the relationship between consumers' reward preferences and their perceived values of the offered rewards would be weaker under the condition of low consumer trust. Hence, **H4** was partially supported. The results from the Wald tests have also revealed that the moderation effects that consumer trust had in the relationships between consumers' dispositional privacy concerns and their respective specific privacy concerns were insignificant (except for except for the case in errors in storage). Hence, **H5** was only partially supported. Under the presence of high consumer trust, consumers with high disposition privacy concerns regarding errors in information storage would have lower specific privacy concerns regarding the vendors' information privacy practices in the issue of errors in information storage. However, the results further revealed that relationships between consumers' dispositional privacy concerns regarding the issues of improper collection, unauthorized secondary usage, and improper access, and their specific privacy concerns in the respective issues, were not moderated by the presence of consumer trust.

6 Discussion and Implications

After assessing the measurement model for its reliability and validity, the conceptual framework was then tested using multiple regression analysis, with its results presented in **Section 5.2**. Using the results, this section attempts to discuss the findings and outcomes of the study. In addition, limitations of the study would be discussed, followed by the discussion of possible implications for both researchers and practitioners.

6.1 Discussion and Results

Consistent with the Social Exchange Theory (SET) (Thibaut and Kelley, 1959; Homans, 1961; Kelly and Thibaut, 1978; Kelley, 1979) and Theory of Response Behavior (Dillman, 1978), the results of this study have shown that consumers would be more willing to disclose their personal information to online vendors if their perceived values of the offered rewards are high (i.e. **H1**). Hence, online vendors could solicit personal information from their consumers by giving them rewards that they perceived to be of high value. These results are also consistent with Benefit Congruency Principle (Chandon et al., 2000) and General Principle of Compatibility (Tversky et al., 1988), which posited that different individuals would have difference preferences for the different types of rewards, and only valued rewards, could induce the disclosure behaviors of the consumers. The results that deals with all the seven types of rewards that include monetary savings, time savings, self-concept enhancement, social adjustment, pleasure, novelty, altruism (Tam et al., 2002), have shown strong support for **H1**.

In accordance to the prior empirical studies (e.g. Smith et al., 1996, Steward and Segards, 2002, etc.), Social Exchange Theory (SET) (Thibaut and Kelley, 1959; Homans, 1961; Kelly and Thibaut, 1978; Kelley, 1979) and Theory of Response Behavior (Dillman, 1978), the results have also found that with high specific concerns regarding the online vendors' information privacy practices, consumers would generally be more unwilling to disclose their personal information to the vendors (i.e **H2**). In particular, the results have revealed that this is true regarding issues of improper collection of information, and improper access to the information by unauthorized personnel. However, the results have shown weak support for the case that deals with the specific privacy concern regarding errors in storage, and unauthorized secondary usage.

One possible explanation for the weak support could be that consumers might perceive that there would be relatively smaller amount of risk involved as compared to other types of privacy concerns. For example, as posited by the survey questions in the study, errors in storage would involve minor issues like the spelling errors or typo errors in the stored information, while unauthorized secondary usage would involve less harmful issues such as using the consumers' information to sell them products/services from other business units of the vendor. Hence, there is a possibility that consumers might perceive lesser amount of perceived risk and cost to be involved in privacy issues such as errors in storage, and unauthorized secondary usage. With lesser perceived risk and cost involved, trust in the online vendors might play a more prominent role in determining the consumers' disclosure intention (Luhmann, 1979). Hence, consumers with high trust might disclose their personal information to the vendors even if they have high specific privacy concerns regarding errors in storage, and unauthorized secondary usage. However, even if the consumers have low trust and perceive that it is possible for the vendors to perform undesirable and unfavorable actions, consumers might still disclose as they perceive that the cost to be incurred would be insignificant due to the modest amount of risk involved.

The results in this study have also shown that with a higher level of consumer trust in online vendors, consumers would be more willing to disclose their personal information to the vendors (see **Table 5.9**) (i.e. **H3**). These results are consistent with the Theory of Response Behavior (Dillman, 1978) and Luhmann (1979)'s view, which posited that having trust in vendors would induce behavior intentions such as the intention to disclose. Furthermore, the results are also in accordance to previous empirical studies such as Gefen (2000), Bhattacharjee (2002), McKnight et al. (2002^b), Xu et al. (2003), etc. Although the results have shown that **H3** holds irrespective of whether there existence or non-existence of rewards/specific privacy concerns, it has been found that the component of consumer trust has an insignificant positive effect on a consumer's disclosure intention when he/she is given monetary savings, time savings, or pleasure as a form of reward. Hence, there is a possibility that if consumers have a high level of trust in an online vendor, they would only have a low or moderate level of disclosure intention if the offered rewards (i.e. monetary savings, time savings, and pleasure) do not mean anything to them. On the other hand, it would also be possible that a consumer, who has a low level of trust in the vendor, would be more willing to disclose as he/she values the offered rewards. One possible explanation for this phenomenon would be that the perceived value of the offered reward plays a more important role in determining a consumer's intention to disclose with the offering of the reward. This could be observed in the results in **Table 5.11**. Thus, regardless of the level of consumer trust, consumers would still be disclosing if they perceived a high enough value for the given monetary savings, time savings, or pleasure.

Besides having a direct effect on consumers' disclosure intention, the results have also shown that under the presence of consumer trust, the relationship between consumers' reward preferences and their perceived values of the offered rewards would be stronger. These results are consistent with the viewpoints of previous studies, which include Dillman (1978) and Luhmann (1979). In particular, it has been found that with the exception of having altruism as a form of reward, having

high level of trust in online vendors would tend to enhance and strengthen consumers' reward preferences, and thereby resulting in higher perceived values of the offered rewards by the consumers (i.e. **H4**). Therefore, under the presence of high trust and high reward preferences, it would only require the offering of a slighter amount of rewards to solicit personal information. However, for the case of having altruism as a form of reward, the results did not substantiate the moderation effect that consumer trust has on the relationship between consumers' reward preferences and their perceived value of the rewards. This phenomenon could be due to the fact that the nature of altruism is very much different from that of other rewards such as monetary savings, time savings, self-concept enhancement, social adjustment, pleasure and novelty. According to Baumeister (1982) and Eshel et al. (1998), altruism involves the "benefiting of others and not oneself, and is a sense of motivation for helping others that includes the enhancement of the well-being of others". Conversely, other rewards such as monetary savings would only benefit the consumer himself/herself. Since rewards such as altruism do not benefit the consumers themselves, there is a possibility that they do not really care about whether the recipients of the rewards would eventually get the rewards as promised by the vendors or not. Hence, using altruism as a form of reward, the issue of whether the vendors would give the rewards as promised does not really matter to the consumers. Consequently, this could be why the moderation effect of consumers trust on the relationship between consumers' reward preferences and perceived reward values is insignificant.

In addition to the moderation effect that consumer trust has on the relationship between consumers' reward preferences and their perceived reward value, the results have also provided weak evidence for the moderation effect that consumer trust has on the relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns regarding the vendors' information privacy practices (i.e. **H5**). In particular, the results have shown that consumer trust seems to suppress or weaken the relationship between the dispositional privacy

concerns of consumers and their respective specific privacy concerns with the vendors, regarding the issue of errors in the storage of their personal information. However, the results show no support for the moderation effects that consumer trust has on the relationships, which involve other privacy concerns issues like that of improper collection, unauthorized secondary usage, and improper access.

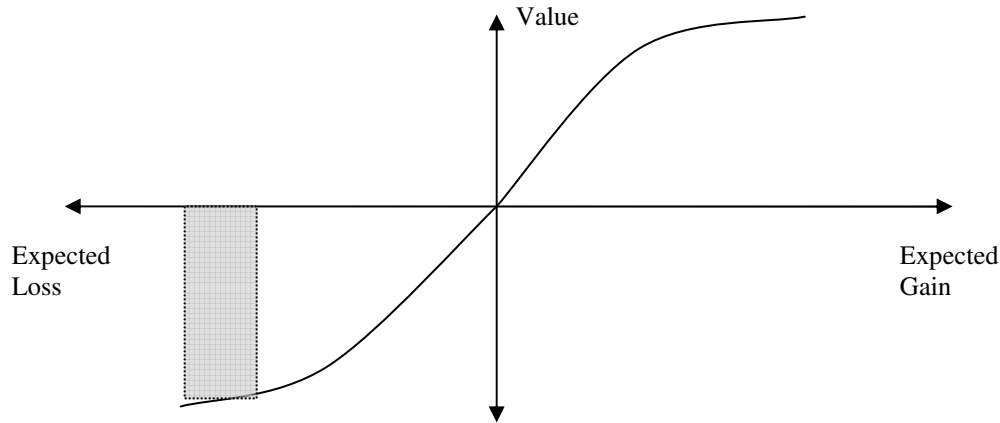


Figure 6.1 – Perceived Values of Expected Gains and Losses

One possible explanation for such phenomenon would be that there are different degrees/severities of risks involved in each privacy concern issue. Since the scenarios in the survey involve banking-related activities, consumers might perceive higher level of risks involved in some privacy issues such as the improper collection of, unauthorized secondary usages, and improper accesses to their information. With this high risk perception, consumers would perceive a higher probability of incurring the privacy costs and would in turn have expect larger losses, which might be at a level as high as that shown in the shaded region in **Figure 6.1** (Kahneman and Tversky, 1979; Kahneman and Tversky, 1982; Kahneman and Tversky, 1984). With such high expected losses, consumers might perceive them to be sure losses rather than just costs, and would tend to have extremely high perceived values and be more concerned with them (see **Figure 6.1**) (Kahneman and Tversky, 1984). Although the total expected losses would be reduced under the presence of trust due to the perception of a lower probability of incurring the losses, trust would only have a

marginal effect on the consumers' perceived values of such losses (i.e. specific privacy concerns), since the original expected losses are at an extremely high level (see shaded region of **Figure 6.1**) and that the value function for loss is convex in nature (in accordance to the Prospect Theory) (see **Figure 6.1**) (Kahneman and Tversky, 1979; Kahneman and Tversky, 1982; Kahneman and Tversky, 1984). Hence, for higher risk involved privacy issues such as improper collection, unauthorized secondary usage, and improper access, where the expected losses are extremely high, the presence of trust would be insufficient to weaken the relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns regarding the online vendors' information privacy practices.

Given the complexity of the relationship between the strongly correlated consumer trust and privacy concerns, where both deals with relational risk (Gandy, 1993; Smith et al, 1996; Milne and Boza, 1998), there is a possibility that some of the dimensions of privacy concerns (i.e. improper collection, unauthorized secondary usage, and improper access) are subsets of consumer trust's domain, on opposite ends of a single continuum (Mayer et al., 1995). If both trust and some of the dimensions of privacy concerns indeed have significant similarities between them, it would then be impossible for consumer trust to show moderation effect on the relationship between consumers' dispositional privacy concerns and their specific privacy concerns in the online vendors' information privacy practices. Hence, to better explain the results found in this study and to better understand the complex relationship between trust and privacy concerns, more in-depth studies should be conducted to explore the similarities and differences between them.

6.2 Limitations

The findings of this study should be interpreted in the context of its limitations. One clear limitation of the present exploratory study is the use of survey methodology to collect the data. The survey methodology does not allow independent variables to be manipulated. Hence, using the collected data from survey, it would be difficult to justify the causal inferences between the dependent and independent variables. To better assess the causal inferences between variables, other empirical research strategies such as experiments could be used. In experiments, researchers could better infer and justify causality as the independent variables could be manipulated, and that threats to internal validity could also be reduced tremendously through the use of control groups. Furthermore, due to its limitations, survey methodology could only measure the behavior intention (i.e. disclosure intention in this study). Using other research mechanisms, such as field studies, more realistic results could be obtained by observing real-life situations in which actual disclosure behaviors could take place with the provision of actual rewards and privacy concerns. Thus to fully understand the relationships between consumer trust, rewards, and privacy concerns, this study has to be carried out using other types of empirical research strategies like experiments and field studies.

Another limitation of the study is the use of graduate students as subjects for the survey. Although the graduate students have experience with e-commerce transactions and that it has been found that e-commerce consumers are generally younger and more highly educated than conventional consumers (OECD, 1998), not all e-commerce consumers would have such high level of educational background or have detailed knowledge about e-commerce (e.g. business models of e-commerce, technological and managerial aspects of e-commerce). Thus, as compared to the actual e-commerce consumers, the student subjects would be different in certain aspects such as consumer trust, reward preference, perceived reward values, dispositional privacy concerns, and

specific privacy concerns. It would be useful to replicate the study using actual consumers of e-commerce.

Besides subjects, another limitation of the study is the choice of industry for the scenarios in the survey design. Banking industry is chosen since it is predicted that the subjects are more familiar and have experience using its online service. However, subjects might be more sensitive with regards to issues regarding banking services, and would associate a higher level of risk to the issues. Hence, it is unjustifiable to generalize any conclusions from the results of this study. Instead, the study should also be replicated across a variety of settings to evaluate the robustness of the results.

The survey design, where single measures are used to assess subjects' perceived rewards values, specific privacy concerns, and disclosure intention, is also a limitation of the present study. With the single measures, the specific example that is chosen for each measures might not be able to represent the overall definition of the construct. For example, in the case of the perceived reward value of monetary saving, the chosen specific example is that of a \$30 reward voucher. However, monetary savings is not just about reward voucher. It could involve other types of monetary savings like that of real cash backs, discounts, or loyalty rewards points, etc. Besides the types of rewards chosen, the amount of rewards given should also be taken into consideration. Nevertheless, in spite of these limitations, the results and findings of this study offer significant implications for both researchers and practitioners.

6.3 Implications for Researchers

This exploratory study has contributed to the findings of prior research in numerous ways. Firstly, the study has shown through its findings that Social Exchange Theory (SET) and the Theory of Response Behavior are applicable to explain the disclosure intention of consumers in an e-commerce context. Based upon prior studies, the present study also establishes the usefulness and importance of the seven types of rewards (Tam, et al., 2002) and the four types of privacy concerns (except errors in storage and unauthorized secondary usage) (Smith, et al., 1996) in soliciting personal information from consumers. In particular, it has been shown that to induce disclosure intention of consumers, it is necessary to understand the important roles played by the consumers' perceived values of the offered rewards and their specific privacy concerns in the online vendors' information privacy practices.

Building upon prior empirical researches and existing theories, the study has also demonstrated the significant effect that consumer trust has in determining one's willingness to disclose. Besides having a direct effect on consumers' disclosure intention, the study has further found that the presence of consumer trust tends to strengthen the relationship between consumers' reward preferences and their perceived values of the offered rewards (except for having altruism as a reward). In addition, the study has made an interesting discovery that consumer trust is only able to weaken the relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns in online vendors' information privacy practices regarding errors in their stored information, where the risk is perceived to be smaller. With regards to other privacy concern issues such as improper collection, unauthorized secondary usage, and improper access, where the perceived risk is higher, it has been found that moderation effect of consumer trust is insignificant. Nevertheless, the findings of the present study have given an insight that more research work is clearly needed to be done.

First, the results of the study have demonstrated the complexity of the relationship between trust (an organizational factor) and privacy concerns (a personal factor). Clearly, more work is needed to be done to further explore their associations with each other and offer better explanation to the findings, which have suggested that trust does not provide significant moderation effect on the relationship between consumers' dispositional privacy concerns and their specific privacy concerns.

Second, the results of the study have also demonstrated the importance of perceived reward values, specific privacy concerns, and consumer trust in disclosure tendency. Thus, it would be interesting and useful to further examine the relationships between them. As an example, a future research could be conducted to explore the substitution effects and the trade-off between the three factors.

Third, as consumer trust is a multi-dimensional factor, prior researches have conceptualized it in different levels of abstraction and application. It would be useful to explore in details the roles that each type of trust (e.g. dispositional trust, cognition-based trust, affect-based trust, initial trust, etc.) plays in inducing consumers' disclosure tendency. Besides considering the consequences and moderation effects of trust, its antecedents should also be explored to increase the overall understanding of the trust construct. Knowing that trust is important in the e-commerce context, it also emphasizes the importance of exploring and understanding the functions of trust building mechanisms, and their pros and cons of their deployment in e-commerce context.

Fourth, besides consumers' perceived reward values, and specific privacy concerns, other personal factors such as personality traits should also be examined to determine their importance in inducing disclosure tendency. Furthermore, to fully understand the concept of consumers' disclosure tendency, other organizational factors such reputation, branding, advertising effects should also be examined.

Fifth, besides business-to-customers (b2c) relationships, there are lots of other forms of relationships, such as business-to-business (b2b), and government-to-consumers (g2c). In each form of relationships, all the consumers, vendors, risk involved, and other situational factors would be different. Thus, it would be interesting to explore the applicability of the present study's model in such situations.

Last but not least, as found in the literature review (see **Section 2.5**) consumers' disclosure intention is not the only outcome of such relationships in e-commerce context. There might be others, such as purchase intentions and willingness to transact online. In relationships with different outcomes, consumers might behave differently in accordance to the level of risk involved, the vulnerabilities they are subjected to, and other situational factors. Thus, further research work could be done to explore the effects that consumer trust, rewards, and privacy concerns, have on such outcomes. Besides that, the differences between the roles play by the respective factors in the situations involving different outcomes should also be investigated.

6.4 Implications for Practitioners

From the findings of the study, one way to solicit personal information from consumers would be through the provision of rewards. In particular, when the rewards given by the online vendors are perceived to be highly valuable, the consumers would be more willing to disclose their personal information in accordance to the vendors' requests. Traditionally, it has been assumed that only monetary savings and time savings would appeal to consumers (Milne and Gorden, 1993; Phelps et al., 2000). However, building on the research undertaken by Tam et al. (2002), this present study further validates that online vendors could use any of the seven types of rewards to solicit consumers' personal information. The seven types of rewards include monetary savings, time savings, self-concept enhancement, social adjustment, pleasure, novelty, and altruism (Tam et al.,

2002). To ensure that the rewards given are those desired by the consumers (i.e. consumers perceive the rewards to be highly valuable); the online vendors should make an effort to study the consumers' perceived values of each type of rewards. Furthermore, by ensuring that the consumers desire and valued the rewards, it would lead to costs savings in the long run. This is so because the total cost of giving a smaller amount of desired rewards would be much lower as compared to the case of giving a large amount of undesired rewards.

Besides providing rewards that are valuable to the consumers, to be successful in soliciting personal information from consumers, online vendors must also take note of the consumers' specific privacy concerns regarding their information privacy practices. In particular, the vendors should take into account the four general types of privacy concerns issues, which include improper collection, errors in the information storage, unauthorized secondary usage, and improper access to the consumers' personal information (Smith et al., 1996). If consumers' specific privacy concerns in the vendors are found to be high, then the vendors should consider the possibility of implementing some forms of privacy protection mechanisms (e.g. merchant profiling, user profiling, anonymity, encryption, etc.) to assure consumers that the vendors understand the importance of privacy issues and would take the extra effort not to invade them. With the help of the privacy protection mechanisms, consumers' specific privacy concerns regarding the vendors' information privacy issues should be alleviated to a lower level and would in turn help to raise their willingness to disclose their information (Culnan, 1993; Xu et al., 2003).

According to the Social Exchange Theory (SET) and the Theory of Response Behavior, it would be better if the online vendors could at the same time provide valuable rewards and lower the specific privacy concerns that the consumers have in them (Thibaut and Kelley, 1959; Homans, 1961; Kelly and Thibaut, 1978; Kelley, 1979; Dillman, 1978). However, due to the costs of providing the rewards and implementations of privacy protection mechanisms, it is usually

infeasible to implement these two mechanisms at the same time if the vendors are low in their financial capital. Hence, to save cost, vendors would usually choose only one of the mechanisms (either providing rewards or alleviating the consumers' privacy concerns issues regarding their information privacy practices). From the findings of the study, it has been found that with the provision of valuable rewards, consumers would tend to have a relatively higher disclosure intention, as compared to the case, where low level of specific privacy concerns issues are present. Hence, it could be inferred that providing valuable rewards to the consumers would be a better choice than alleviating consumers' specific privacy concerns, if only one of these mechanisms is chosen.

Besides knowing the importance of valuable rewards and low level of specific privacy concerns in soliciting personal information from consumers, online vendors should not ignore the importance of consumer trust as well. With sufficient level of consumer trust in the online vendors, consumers would be more willing to disclose their personal information, and do not expect the provision of rewards in return or take into account the privacy issues. Hence, to solicit personal information, online vendors should also take into consideration the level of trust consumers have in them, and work towards maintaining or enhancing the respective high or low level of trust that consumers have in them. To increase the level of consumer trust, which is after all an organizational asset (McKnight et al., 2002^b), vendor could consider the possibility of implementing trust production mechanisms. However, different trust production mechanisms would have different impact on new or existing consumers. Thus, in order to be successful in implementing the trust production mechanisms, the vendors should first identify their targeted group of consumers (i.e. whether they are new or existing consumers). When dealing with potential or new consumers, it is more important to take into account the initial cognition-based trust of the consumers. Cognition-based trust could be built through mechanisms like that of institutional-based trust, which is induced by having formal marketable structures (e.g. TRUSTe, TrustSg), to pledge the vendors' integrity,

ability and intentions. On the other hand, when dealing with existing consumers, vendors should emphasize more on building their affect-based trust, which could be enhanced through mechanisms such as process-based trust (Zucker, 1986). Process-based trust work to build consumers' affect-based trust through the online vendors' relationships with the consumers, brand names, and reputation, which “depend on past transactions, familiarity with the vendors, repeated purchases, or expected future exchange” (Zucker, 1986). The vendors could also consider emphasizing their past ability, benevolence, and integrity (Mayer et al., 1995), to the existing consumers.

Besides having a direct positive effect on the disclosure tendency of consumers, another important role that consumer trust plays in soliciting personal information from consumers is that it is able to strengthen the relationship between consumers' reward preference and their perceived value of the offered reward. However, the findings of the study do not show any significant moderation effect (i.e. weakening effect) that consumer trust has on the relationship between consumers' dispositional privacy concerns and their respective specific privacy concerns in the vendors' information privacy practices. These findings offer significant practical implications to vendors, whom the consumers might have high or low trust in. If it is found that the consumers have high level of trust in the online vendors, it would be wise to rely on this high level of trust and offer rewards that are valuable to the consumers. The synergy between the high level of consumer trust and the high level of reward preference would result in an extremely high perceived value of the offered reward that would in turn leads to an extremely high level of disclosure tendency of the consumer.

On the other hand, if vendors find that consumers have low level of trust in them, they should in turn work towards lowering the specific privacy concerns that consumers have in their information privacy practices, instead of just offering them rewards in return of their disclosed information.

This is because regardless of the level of trust, consumers' specific privacy concerns in the vendors' information privacy practices would most likely be determined by their respective dispositional privacy concerns, which is part of their personality traits. Furthermore, under the presence of a low level of trust, the perceived values of the offered rewards would be lower as compared to the case where the level of trust is high. In order to have a high enough perceived reward value to induce the disclosure tendency, it would require the vendors to offer the consumer a larger amount of reward, which might be infeasible in some cases. Hence for soliciting personal information from low trusting consumers, it would be more advisable and worthwhile for online vendors to implement privacy protection mechanisms to reduce the level of consumers' specific privacy concerns, as compared to the option of offering them rewards.

7 Conclusion

To survive in the competitive global market, where effective efforts are needed to increase consumers' loyalty and attract new consumers, it is essential for vendors to collect vast amounts of consumers' personal information. This personal information would not only allow vendors to exploit opportunities for mass customization, but would also allow vendors to develop marketing efforts such as reward programs, which are based on consumers' purchases behaviors and preferences. However, due to prominent e-commerce related issues such as trust in ambiguous vendors and information privacy, soliciting personal information from the consumers on Internet seems to be a more complex and tricky affair.

This research study builds on existing literature. By considering both dispositional and situational factors, it attempts to investigate the working mechanisms of personal and organizational factors in determining consumers' willingness to disclose to online vendors. The findings of this study are able to contribute to the existing e-commerce literature, and give precise practical aids to online

vendors in choosing the course to solicit personal information from the consumers. In particular, it has been found that effective efforts in encouraging consumers to disclose their personal information could be achieved with the offering of rewards that are perceived to be valuable, and lowering of consumers' specific privacy concerns regarding the vendors' information privacy practices. Furthermore, the study has validated the roles of consumer trust in the process of online disclosure. Besides having a direct influence on consumers' intention to disclose to online vendors, consumer trust could also indirectly affect consumers' disclosure tendency through their perceived reward values. Under the presence of consumer trust, synergy could be achieved from the interaction of the consumers' reward preferences and trust, and result in unusually high perceived values of the offered rewards. This unusually high perceived reward values would then lead to high disclosure tendency. However, the study has also demonstrated that consumer trust does not play a significant role in weakening the influence that the consumers' dispositional privacy concerns have in their respective specific privacy concerns regarding the vendors' information privacy practices.

In recent years, the discussion of factors that affect online consumers' disclosure tendency (e.g. perceived rewards values, privacy concerns, consumer trust, etc.) has intensified. This not only leads to the introduction of more relevant factors, but also controversy regarding existing recommended factors. Clearly, the research in this area is still in an infancy stage and more research efforts would be needed in this direction to help paint a more complete picture as to how online vendors could be more effective in soliciting personal information from their consumers.

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Appendix A – Table of Studies Involving Trust in E-Commerce Context

Study	Conceptualization of Trust	Findings
Bhattacharjee (2002)	Trusting beliefs (including ability, benevolence and integrity of online firms)	Familiarity has a positive impact on trust, which in turn is able to positively influence a consumer's willingness to transact.
Gefen (2000)	Willingness to depend	The study found that familiarity builds trust. Also the study found that both familiarity and trust is able to influence a consumer's inquiring and purchasing intention.
Gefen (2002a)	Willingness to depend	The study found that with increased trust, customer loyalty to a specific vendor will also increase.
Jarvenpaa et al. (2000)	Willingness to rely when vulnerability exists	Trust, which is defined as the willingness to rely on the online store, is found to be influenced by the vendor's perceived size and reputation. The trust in the store is also found to influence the consumer's willingness to buy through both risk perception and attitudes.
Lee and Turban (2001)	Willingness to be vulnerable	Trustworthiness of merchant, in particular its integrity significantly affects consumer trust in Internet shopping and that this relationship is moderated by the consumer's trust propensity.
McKnight et al. (2002 ^b)	Trusting beliefs (including benevolence, competence, honesty and predictability) that leads to trusting intention	Trust is proven to be multi-dimensional. The result found that disposition of trust has an impact on both institutional trust and trusting belief. Furthermore, trusting belief is found to significantly affect trusting intention. Moreover, personal innovativeness is found to be affected by disposition of trust, while web experience has an impact on institutional trust. Site quality also has an effect on both trusting beliefs and intention.
Pavlor and Gefen (2002)	Willingness to depend	Institutional trust is found to indeed play a part in producing trust in a company. Furthermore, the trust in the company is found to be influenced by individual's propensity of trust, and that the former have a positive direct effect on transaction intentions.
Xu et al. (2003)	Willingness to be vulnerable	Consumer trust in Internet business can facilitate disclosure tendency. Furthermore, trust is proved to moderate the relationship between reward preferences/privacy concerns and disclosure intention.
Yousafzai et al. (2003)	Willingness to be vulnerable	A conceptual paper that argues that the relationship between perceived security and trust is moderated by perceived competence. The relationship between perceived privacy and trust is moderated by both perceived benevolence and integrity. Trust will have a negative impact on perceived risk, which then leads to intention to use.

Appendix B – Table of Studies with Their Dependent Variables in E-Commerce Context

Study	Dependent Variable	Findings
Xu et al. (2003)	Willingness to disclose personal information	Trust, provision of reward preferences and alleviation of privacy concerns has a positive impact on disclosure intention. The relationship between the reward preferences/privacy concerns and disclosure intention is moderated by trust.
Hui et al. (2003)	Willingness to disclose personal information	Preference for benefits has a positive impact on one's intention to disclose his/her personal information.
Yousafzai et al. (2003)	Intention to use e-Banking service	Trust is found to reduce one's perceived risk, which then has a direct impact on one's intentions to use e-Banking service.
Bhattacharjee (2002)	Willingness to transact	An individual's trust in an online vendor is directly related to their willingness to transact with that vendor.
Gefen (2000)	Intentions to inquire and purchase products on the vendor's website	Both familiarity and trust in the vendor influenced an individual's intention to inquire about books and his/her intention to purchase the book.
Smith et al. (1996)	Willingness to disclose information	With high level of privacy concern, one will be less willing to disclose his/her personal information.
Phelps et al. (2000)	Consumer's willingness to provide information	Beliefs regarding marketers' information practices and overall privacy concern are directly related to the consumer's willingness to provide information.
Yoon (2002)	Online Purchase Intention	Trust and satisfaction in the website have a positive causal relationship with online purchase intention.
Gefen (2003)	Online shoppers' intentions to continue using a website	Habit has an impact on the continued use of a website. The continued use of the website can also be explained using TAM.
Heijden et al. (2003)	Online purchase intention	Perceived risk and perceived ease of use have a direct effect on the attitude towards purchasing online.
Heijden (2003)	Acceptance and usage of websites	Empirically investigate an extension of TAM (includes perceived attractiveness and enjoyment) to explain one's acceptance and usage of websites.
Pavlor (2003)	Consumer acceptance of e-commerce	Based on TAM, trust and perceived risk, the study's proposed model is able to predict consumer acceptance of e-commerce.
Suh and Han (2003)	Acceptance of Internet Banking	Trust has a significant positive impact on the acceptance of Internet banking.
Jarvenpaa et al. (2000)	Willingness to buy	Consumers recognized the differences in size and reputation among Internet stores, which would influenced their perception of the store trustworthiness their perception of risk, as well as their willingness to patronize the store
Belanger et al. (2002)	Willingness to disclose and intention to purchase	Consumers rely on their perception of the store trustworthiness when making the decision to disclose their private information. On the other hand, pleasure features is more important than privacy and security features when considering consumers' intention to purchase.

Appendix C – A Sample of the Survey Questionnaire

**** Note – There are a total of 56 versions of the survey questionnaires, 28 versions for each of the bank (i.e. DBS bank and Bank of Nigeria). For each version, the questionnaires are the same except for the bank in the scenario and Section D, Question 1b, v, which is the disclosure due to the one of the sevens types of reward value and one of the four types of specific privacy concern.**

Please indicate the extent to which you, as an individual, agree or disagree with each statement below by circling the appropriate number. There is no right or wrong answers, only your personal opinions matter. Please circle **ONLY ONE** number for each question and complete **ALL** questions in each section.

Section A:

Suppose you are interested in opening a saving account with a bank over the Internet. You are browsing through the Internet and came across the DBS bank's website, <http://www.dbs.com.sg>. However, before applying for the saving account, the DBS bank's website requires you to register with it online and provide your personal information such as name, date of birth, home address, email address, phone number, etc.

Please indicate the extent to which you, as an individual, agree or disagree with each of the following statements by circling the appropriate number. Again, there is no right or wrong answers, only your personal opinions matter.

Part 1:

			Strongly Disagree		Neutral			Strongly Agree	
1.	DBS bank will keep the promises it makes to me.	----	1	2	3	4	5	6	7
2.	DBS bank will always be honest with me.	----	1	2	3	4	5	6	7
3.	I believe the information that DBS bank provides me.	----	1	2	3	4	5	6	7
4.	DBS bank is genuinely concerned about my well-being as a consumer.	----	1	2	3	4	5	6	7
5.	When making important decisions, DBS bank will consider my welfare as well as its own.	----	1	2	3	4	5	6	7
6.	I trust DBS bank to keep my best interests in mind.	----	1	2	3	4	5	6	7
7.	DBS bank is trustworthy.	----	1	2	3	4	5	6	7
8.	I do not find it necessary to be cautious with DBS bank.	----	1	2	3	4	5	6	7

Part 2:

			Strongly Disagree			Neutral		Strongly Agree	
1.	I would feel uncomfortable if there is <u>NO</u> information on DBS bank’s website that states that								
a.	.....the bank will not collect additional information about me from other sources (e.g. check with government agencies to collect my family criminal records, medical history, marital history, etc.).	----	1	2	3	4	5	6	7
b.	.....the bank will ensure the correctness of my information (e.g. no explicit steps taken to check the accuracy of my information, no mechanism that allows me to update my information, etc.).	----	1	2	3	4	5	6	7
c.	.....the bank will not use my information to sell me products/services from its other units (e.g. insurance, land properties, auction items, etc.).	----	1	2	3	4	5	6	7
d.	.....other organizations (e.g. insurance companies, real estates agents, travel agents, etc.) will not access my information without my authorization.	----	1	2	3	4	5	6	7
			Strongly Disagree			Neutral		Strongly Agree	
2.	It would be of high value to me if DBS bank offers <u>each of the following</u> through its website.								
a.	An option to receive a 30 dollar voucher which I can use to purchase something that I want from my favorite store (e.g. Isetan, Best Denki, Harvey Norman, Carrefour, etc.).	----	1	2	3	4	5	6	7
b.	An option to have an improved version of the bank’s website that allows for faster login, easier and swifter access to its online services (e.g. viewing bank account statement, fund transfer, bill payment, etc.).	----	1	2	3	4	5	6	7
c.	An option to own an exclusive product/service that is normally offered to valuable customers of the bank (e.g. Platinum VISA debit card, premier status with SIA frequent flyer program, limited edition “Treasure” card, etc.).	----	1	2	3	4	5	6	7
d.	An exclusive option to join one of the bank’s clubs of my choice (e.g. motoring, golf, traveling, cosmetic/skincare products, etc.) that allows me to interact with like-minded people.	----	1	2	3	4	5	6	7
e.	An option to receive daily entertainment (e.g. latest music samples, movies trailers, online word games, etc.).	----	1	2	3	4	5	6	7

		Strongly Disagree				Neutral			Strongly Agree
2.	It would be of high value to me if DBS bank offers <u>each of the following</u> through its website.								
f.	An option to receive a newsletter that introduces innovative products/services (e.g. alternative way to optimize saving returns, new way of bill payment, latest investment products, etc.).	----	1	2	3	4	5	6	7
g.	An option to donate 30 dollars to a charitable organization (e.g. Community Chest, The Salvation Army, Red Cross, United Nations Children's Fund, etc.).	----	1	2	3	4	5	6	7

Section B:

Note: The word “websites” in this section generally refer to any websites on the Internet.

			Strongly Disagree			Neutral		Strongly Agree	
1.	When websites collect my personal information they should offer me monetary rewards.	----	1	2	3	4	5	6	7
2.	Websites that collect my personal details should offer me rebates.	----	1	2	3	4	5	6	7
3.	If I give my personal particulars to websites, I should receive useful free gifts.	----	1	2	3	4	5	6	7
4.	I should be given complimentary gifts that are valuable when I provide my personal details to websites.	----	1	2	3	4	5	6	7
5.	I should gain convenience if I provide my personal information to websites.	----	1	2	3	4	5	6	7
6.	For the same activities, I should be able to spend less time at websites that collect my personal details.	----	1	2	3	4	5	6	7
7.	Websites that collect my personal particulars should reduce my effort needed to perform the same tasks.	----	1	2	3	4	5	6	7
8.	When websites collect my personal information, they should give me opportunities to appear impressive.	----	1	2	3	4	5	6	7
9.	Websites that collect my personal particulars should offer me means to boost my self-confidence.	----	1	2	3	4	5	6	7
10.	Websites should have means to highlight my abilities when they collect my personal particulars.	----	1	2	3	4	5	6	7
11.	I should be given opportunities to obtain things that my peers expect me to have when websites collect my personal particulars.	----	1	2	3	4	5	6	7

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			Strongly Disagree		Neutral		Strongly Agree	
12.	Websites that collect my personal details should offer me things that like-minded others appreciate.	----	1	2	3	4	5	6 7
13.	I should be given chances to interact with like-minded others when I provide my personal particulars to websites.	----	1	2	3	4	5	6 7
14.	Websites that collect my personal details should provide means for me to feel happy.	----	1	2	3	4	5	6 7
15.	I should be given ways to attain enjoyment when websites collect my personal information.	----	1	2	3	4	5	6 7
16.	Websites that collect my personal details should provide ways for me to have fun.	----	1	2	3	4	5	6 7
17.	I should be given chances to gain new ideas when I provide my personal details to websites.	----	1	2	3	4	5	6 7
18.	Websites that collect my personal particulars should provide me with new information.	----	1	2	3	4	5	6 7
19.	When I give my personal particulars to websites, I should be able to learn new ways of doing things.	----	1	2	3	4	5	6 7
20.	Websites should expose me to new ways of carrying out daily activities when they collect my personal details.	----	1	2	3	4	5	6 7
21.	Websites should provide me with opportunities to learn when I give my personal particulars to them.	----	1	2	3	4	5	6 7
22.	Websites that collect my personal details should let me fulfill my desire to assist others.	----	1	2	3	4	5	6 7
23.	When websites collect my personal information, they should let me serve others.	----	1	2	3	4	5	6 7
24.	I should be given opportunities to extend a helping hand to others when I provide my personal particulars to websites.	----	1	2	3	4	5	6 7
25.	I should be given chances to improve the well being of others when websites collect my personal information.	----	1	2	3	4	5	6 7
26.	When I provide my personal details to websites, they should let me help others achieve their goals.	----	1	2	3	4	5	6 7

Section C:

Note: The word “websites” in this section generally refer to any websites on the Internet.

		Strongly Disagree			Neutral			Strongly Agree	
		----	1	2	3	4	5	6	7
1.	It usually bothers me when websites ask me for personal information.	----	1	2	3	4	5	6	7
2.	All the personal information in computer databases should be double-checked for accuracy – no matter how much it costs.	----	1	2	3	4	5	6	7
3.	Websites should not use personal information for any purpose unless it has been authorized by the individuals who provided the information.	----	1	2	3	4	5	6	7
4.	Websites should devote more time and effort to preventing unauthorized access to personal information.	----	1	2	3	4	5	6	7
5.	When websites ask me for personal information, I sometimes think twice before providing it.	----	1	2	3	4	5	6	7
6.	Websites should take more steps to make sure that the personal information in their files is accurate.	----	1	2	3	4	5	6	7
7.	When people give personal information to a website for some reason, the website should never use the information for any other reason.	----	1	2	3	4	5	6	7
8.	Websites should have better procedures to correct errors in personal information.	----	1	2	3	4	5	6	7
9.	Computer databases that contain personal information should be protected from unauthorized access – no matter how much it costs.	----	1	2	3	4	5	6	7
10.	It bothers me to give information to so many websites.	----	1	2	3	4	5	6	7
11.	Websites should never sell personal information in their computer databases to other companies.	----	1	2	3	4	5	6	7
12.	Websites should devote more time and effort to verifying the accuracy of personal information in their databases.	----	1	2	3	4	5	6	7
13.	Websites should never share personal information with other websites unless it has been authorized by the individuals who provided the information.	----	1	2	3	4	5	6	7
14.	Websites should take more steps to make sure that unauthorized people cannot access personal information in their computers.	----	1	2	3	4	5	6	7

		Strongly Disagree			Neutral		Strongly Agree	
15.	I'm concerned that websites are collecting too much personal information about me.	----	1	2	3	4	5	6 7

Section D:

Suppose you have now browsed through the DBS bank's website. Please indicate the extent to which you would be interested to disclose your information to the website in order to open a saving account, if each of the following is done separately. Again, there is no right or wrong answers, only your personal opinions matter.

		Strongly Disagree			Neutral		Strongly Agree	
1.	I would be interested to provide my information to the DBS bank's website if							
a.	.....the DBS bank's website states that there would be <u>NO</u> misuse of my disclosed information and does <u>NOT</u> offer anything in addition to the saving account	----	1	2	3	4	5	6 7
i.	.....condition 1(a) except that now the bank offers through its website an option to receive a 30 dollar voucher which I can use to purchase something that I want from my favorite store (e.g. Isetan, Best Denki, Harvey Norman, Carrefour, etc.).	----	1	2	3	4	5	6 7
ii.	.....condition 1(a) except that now the bank offers through its website an option to have an improved version of the bank's website that allows for faster login, easier and swifter access to its online services (e.g. viewing bank account statement, fund transfer, bill payment, etc.).	----	1	2	3	4	5	6 7
iii.	.....condition 1(a) except that now the bank offers through its website an option to own an exclusive product/service that is normally offered to valuable customers of the bank (e.g. Platinum VISA debit card, premier status with SIA frequent flyer program, limited edition "Treasure" card, etc.).	----	1	2	3	4	5	6 7
iv.	.....condition 1(a) except that now the bank offers through its website an exclusive option to join one of the bank's clubs of my choice (e.g. motoring, golf, traveling, cosmetic/skincare products, etc.) that allows me to interact with like-minded people.	----	1	2	3	4	5	6 7

		Strongly Disagree				Neutral			Strongly Agree
1.	I would be interested to provide my information to the DBS bank's website if								
a.	.....the DBS bank's website states that there would be <u>NO</u> misuse of my disclosed information and does <u>NOT</u> offer anything in addition to the saving account								
v.	.....condition 1(a) except that now the bank offers through its website an option to receive daily entertainment (e.g. latest music samples, movies trailers, online word games, etc.).	----	1	2	3	4	5	6	7
vi.	.....condition 1(a) except that now the bank offers through its website an option to receive a newsletter that introduces innovative products/services (e.g. alternative way to optimize saving returns, new way of bill payment, latest investment products, etc.).	----	1	2	3	4	5	6	7
vii.	.....condition 1(a) except that now the bank offers through its website an option to donate 30 dollars to a charitable organization (e.g. Community Chest, The Salvation Army, Red Cross, United Nations Children's Fund, etc.).	----	1	2	3	4	5	6	7

		Strongly Disagree				Neutral			Strongly Agree
1.	I would be interested to provide my information to the DBS bank's website if								
b.	.....the DBS bank's website does <u>NOT</u> offer anything in addition to the saving account and states that there would be <u>NO</u> misuse of my disclosed information								
i.	.....condition 1(b) except that now there is no information on the website that states that the bank will not collect additional information about me from other sources (e.g. check with government agencies to collect my family criminal records, medical history, marital history, etc.).	----	1	2	3	4	5	6	7
ii.	.....condition 1(b) except that now there is no information on the website that states that the bank will ensure the correctness of my information (e.g. no explicit steps taken to check the accuracy of my information, no mechanism that allows me to update my information, etc.).	----	1	2	3	4	5	6	7

		Strongly Disagree				Neutral			Strongly Agree
1.	I would be interested to provide my information to the DBS bank's website if								
b.	.....the DBS bank's website does <u>NOT</u> offer anything in addition to the saving account and states that there would be <u>NO</u> misuse of my disclosed information								
iii.	.....condition 1(b) except that now there is no information on the website that states that the bank will not use my information to sell me products/services from its other units (e.g. insurance, land properties, auction items, etc.).	----	1	2	3	4	5	6	7
iv.	.....condition 1(b) except that now there is no information on the website that states that other organizations (e.g. insurance companies, real estates agents, travel agents, etc.) will not access my information without my authorization.	----	1	2	3	4	5	6	7
v.	.....condition 1(b) except that now								
	- the bank offers through its website an option to receive a 30 dollar voucher which I can use to purchase something that I want from my favorite store (e.g. Isetan, Best Denki, Harvey Norman, Carrefour, etc.), and	----	1	2	3	4	5	6	7
	- there is no information on the website that states that the bank will not collect additional information about me from other sources (e.g. check with government agencies to collect my family criminal records, medical history, marital history, etc.).								

Section E:

Disclaimer: All the information collected in this section is collected for research purposes and will not be disclosed to anyone.

1. Age: _____
2. Country of citizenship: _____
3. Gender: ☐ Male ☐ Female
4. How many hours in a week do you use the Internet? _____
5. When did you start using the Internet? (Year) _____
6. Have you ever disclosed any personal information to websites? ☐ Yes ☐ No
7. How many websites have you provided personal information within the last 12 months? _____
8. What is your current work appointment? _____
9. How many years of working experience do you have? _____
10. Contact email (Optional): _____

Appendix D – Results of Constructs-Pairwise Constrained Chi-Square Tests

Construct 1	Construct 2	Constrained Model Chi-Square	Unconstrained Model Chi-Square	Chi-Square Difference	Sig at 5%
CT	MS	887.19	153.44	733.75	Significant
CT	TS	295.62	108.40	187.22	Significant
CT	SC	349.62	115.55	234.07	Significant
CT	SA	262.56	105.72	156.84	Significant
CT	PL	352.37	113.14	239.23	Significant
CT	NV	672.77	139.31	533.46	Significant
CT	AL	896.13	168.82	727.31	Significant
CT	IC	388.77	121.92	266.85	Significant
CT	ES	450.95	138.36	312.59	Significant
CT	US	493.41	123.02	370.39	Significant
CT	IA	362.36	123.13	239.23	Significant
MS	CT	887.19	153.44	733.75	Significant
MS	TS	195.73	58.00	137.73	Significant
MS	SC	262.32	34.14	228.18	Significant
MS	SA	182.59	42.22	140.37	Significant
MS	PL	261.81	34.32	227.49	Significant
MS	NV	806.44	61.85	744.59	Significant
MS	AL	756.89	74.90	681.99	Significant
MS	IC	290.77	45.00	245.77	Significant
MS	ES	356.76	32.88	323.88	Significant
MS	US	403.46	35.40	368.06	Significant
MS	IA	265.07	38.87	226.20	Significant
TS	CT	295.62	108.40	187.22	Significant
TS	MS	195.73	58.00	137.73	Significant
TS	SC	204.82	22.21	182.61	Significant
TS	SA	173.61	15.21	158.40	Significant
TS	PL	176.09	16.01	160.08	Significant
TS	NV	188.94	27.70	161.24	Significant
TS	AL	231.46	50.67	180.79	Significant
TS	IC	197.55	10.34	187.21	Significant
TS	ES	203.31	16.22	187.09	Significant
TS	US	371.07	12.56	358.51	Significant
TS	IA	244.96	30.48	214.48	Significant
SC	CT	349.62	115.55	234.07	Significant
SC	MS	262.32	34.14	228.18	Significant
SC	TS	204.82	22.21	182.61	Significant
SC	SA	83.79	43.06	40.73	Significant
SC	PL	233.66	16.80	216.86	Significant
SC	NV	268.96	29.28	239.68	Significant
SC	AL	315.73	78.55	237.18	Significant
SC	IC	273.09	17.38	255.71	Significant
SC	ES	260.30	9.88	250.42	Significant
SC	US	374.02	9.01	365.01	Significant

Construct 1	Construct 2	Constrained Model Chi-Square	Unconstrained Model Chi-Square	Chi-Square Difference	Sig at 5%
SC	IA	241.38	11.81	229.57	Significant
SA	CT	262.56	105.72	156.84	Significant
SA	MS	182.59	42.22	140.37	Significant
SA	TS	173.61	15.21	158.40	Significant
SA	SC	83.79	43.06	40.73	Significant
SA	PL	71.99	15.55	56.44	Significant
SA	NV	153.15	56.59	96.56	Significant
SA	AL	209.00	77.47	131.53	Significant
SA	IC	183.48	16.83	166.65	Significant
SA	ES	164.19	6.98	157.21	Significant
SA	US	371.53	5.67	365.86	Significant
SA	IA	232.92	7.90	225.02	Significant
PL	CT	352.37	113.14	239.23	Significant
PL	MS	261.81	34.32	227.49	Significant
PL	TS	176.09	16.01	160.08	Significant
PL	SC	233.66	16.80	216.86	Significant
PL	SA	71.99	15.55	56.44	Significant
PL	NV	254.57	51.26	203.31	Significant
PL	AL	279.78	56.73	223.05	Significant
PL	IC	266.01	8.61	257.40	Significant
PL	ES	248.23	17.79	230.44	Significant
PL	US	374.17	9.84	364.33	Significant
PL	IA	233.65	13.55	220.10	Significant
NV	CT	672.77	139.31	533.46	Significant
NV	MS	806.44	61.85	744.59	Significant
NV	TS	188.94	27.70	161.24	Significant
NV	SC	268.96	29.28	239.68	Significant
NV	SA	153.15	56.59	96.56	Significant
NV	PL	254.57	51.26	203.31	Significant
NV	AL	656.19	101.31	554.88	Significant
NV	IC	287.41	32.85	254.56	Significant
NV	ES	344.05	29.68	314.37	Significant
NV	US	393.76	36.57	357.19	Significant
NV	IA	250.32	21.70	228.62	Significant
AL	CT	896.13	168.82	727.31	Significant
AL	MS	756.89	74.90	681.99	Significant
AL	TS	231.46	50.67	180.79	Significant
AL	SC	315.73	78.55	237.18	Significant
AL	SA	209.00	77.47	131.53	Significant
AL	PL	279.78	56.73	223.05	Significant
AL	NV	656.19	101.31	554.88	Significant
AL	IC	306.53	45.82	260.71	Significant
AL	ES	366.05	49.78	316.27	Significant
AL	US	410.14	50.22	359.92	Significant
AL	IA	267.27	44.68	222.59	Significant

Construct 1	Construct 2	Constrained Model Chi-Square	Unconstrained Model Chi-Square	Chi-Square Difference	Sig at 5%
IC	CT	388.77	121.92	266.85	Significant
IC	MS	290.77	45.00	245.77	Significant
IC	TS	197.55	10.34	187.21	Significant
IC	SC	273.09	17.38	255.71	Significant
IC	SA	183.48	16.83	166.65	Significant
IC	PL	266.01	8.61	257.40	Significant
IC	NV	287.41	32.85	254.56	Significant
IC	AL	306.53	45.82	260.71	Significant
IC	ES	240.18	44.64	195.54	Significant
IC	US	145.78	28.71	117.07	Significant
IC	IA	151.50	25.76	125.74	Significant
ES	CT	450.95	138.36	312.59	Significant
ES	MS	356.76	32.88	323.88	Significant
ES	TS	203.31	16.22	187.09	Significant
ES	SC	260.30	9.88	250.42	Significant
ES	SA	164.19	6.98	157.21	Significant
ES	PL	248.23	17.79	230.44	Significant
ES	NV	344.05	29.68	314.37	Significant
ES	AL	366.05	49.78	316.27	Significant
ES	IC	240.18	44.64	195.54	Significant
ES	US	282.65	42.17	240.48	Significant
ES	IA	167.26	25.72	141.54	Significant
US	CT	493.41	123.02	370.39	Significant
US	MS	403.46	35.40	368.06	Significant
US	TS	371.07	12.56	358.51	Significant
US	SC	374.02	9.01	365.01	Significant
US	SA	371.53	5.67	365.86	Significant
US	PL	374.17	9.84	364.33	Significant
US	NV	393.76	36.57	357.19	Significant
US	AL	410.14	50.22	359.92	Significant
US	IC	145.78	28.71	117.07	Significant
US	ES	282.65	42.17	240.48	Significant
US	IA	71.38	37.19	34.19	Significant
IA	CT	362.36	123.13	239.23	Significant
IA	MS	265.07	38.87	226.20	Significant
IA	TS	244.96	30.48	214.48	Significant
IA	SC	241.38	11.81	229.57	Significant
IA	SA	232.92	7.90	225.02	Significant
IA	PL	233.65	13.55	220.10	Significant
IA	NV	250.32	21.70	228.62	Significant
IA	AL	267.27	44.68	222.59	Significant
IA	IC	151.50	25.76	125.74	Significant
IA	ES	167.26	25.72	141.54	Significant
IA	US	71.38	37.19	34.19	Significant